DOCUMENT RESUME

ED 235 240 TM 830 668

AUTHOR Salinger, Ruth; Bartlett, Joan
TITLE Evaluating the Impact of Training: A Collection of Federal Agency Evaluation Practices.
INSTITUTION Office of Personnel Management, Washington, DC. Training Resources Management Div.
PUB DATE 83
NOTE 205p.; Some attachments contain small print.
PUB TYPE Reports - Evaluative/Feasibility (142) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC09 Plus Postage.
DESCRIPTORS Case Studies; Data Collection; *Evaluation Methods; Evaluation Utilization; *Federal Programs; Needs Assessment; *Program Evaluation; Training Methods; Training Objectives
IDENTIFIERS Department of Education; Department of Labor; General Accounting Office; Internal Revenue Service; Naval Research Laboratory; Office of Personnel Management; Participant Action Plan Approach; Return On Investment

ABSTRACT

The purpose of this document is to share various approaches used by federal agencies to assess needs and measure training effectiveness. The emphasis in the descriptions is on the evaluation process rather than on the results. One program was evaluated by employing return-on-investment (ROI) data and using volunteer line personnel who conducted the course to gather and diagnose the results with participants. Various control groups were used to assess success of another program. Data, which were manipulated by a computer program, revealed the relationship between training and job performance for another study. One course was evaluated by means of an employee in-course evaluation and a supervisory on-job performance evaluation 4 to 6 months after the course. Tracking monthly reports and interviewing managers at quarterly intervals to ascertain the extent of the implementation of features taught during a particular course were additional evaluation techniques used. A semi-structured group interview evaluation process produced specific examples of changes resulting from specific training. A generic follow-up evaluation method, the Participant Action Plan Approach (PAPA), determines the extent of behavioral change after a training course. It was used in conjunction with questionnaires and personal interviews to assess if specific changes were actually implemented as a result of training. (HFG)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED235240

U.S. Office of Personnel Management
Office of Training
Training Resources Management Division

EVALUATING THE IMPACT OF TRAINING

A Collection of Federal Agency Evaluation Practices

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Ruth Salinger
U. S. Office of Personnel Management

Joan Bartlett
Howard University

SPRING 1983

TM 830 668

OPM the Government's trainer

TABLE OF CONTENTS

	Page
Introduction	1
Guide to Agency Evaluation Features	5
Department of Education	6
General Accounting Office	31
Internal Revenue Service	57
Department of Labor/Employment Standards Administration	85
.ESA - Part I	86
.ESA - Part II	102
Naval Research Laboratory	110
Office of Personnel Management	118

Appendices

.Appendix A - Overviews of Training Evaluation

.Appendix B - Selected Bibliography

.Appendix C - U.S. Office of Personnel Management Contacts

INTRODUCTION

The purpose of this document is to share various approaches used by Federal agencies to assess needs and measure training effectiveness. In all cases, the evaluation extends to looking at the impact of training on job behavior. In a number of the situations presented, the post-course evaluation flowed directly from the information on employees' present skills and job requirements developed before the training program was put in place.

This document is not meant solely to be an inspirational piece, as, in Robert Mager's terms, "you really oughta wanna" do assessment and evaluation. Nor is it designed to be an all-inclusive how-to manual with a full set of instructions, forms, and guidance. We see it instead as serving these purposes:

- To provide ideas to readers on how different types of programs can be assessed using various evaluation techniques.
- To offer enough information to readers so that they can make decisions about the appropriateness of an approach for their own setting, and can adapt examples of instruments and design features for their own needs.
- To provide agency contacts who are willing to share their experiences with others, and thus to expand the practice of resource sharing and information exchange.

Why were the particular agency efforts chosen? They all have certain characteristics in common: Looking past the training setting to measuring participant change; taking a systematic approach to gathering information;

enabling decisions to be made about the training effort based on the evaluation results. The approaches "worked" in the sense that the agencies were able to use the information generated for the intended purposes of the evaluation.

It should be noted that the emphasis in the descriptions is on the evaluation process, not the results. In some cases, the results indicated that the training was on target, while in others the evaluation indicated that changes were needed in the program, in the intended audience, or in the use of training as the means, or the sole means, for change. The reader should also note that even for evaluation efforts which were elaborately designed and were resource-intensive, certain aspects of the process (e.g., the questions asked; the individuals contacted) may be applicable in other contexts and used in simpler ways. The matrix at the end of this section highlights the features of the agency efforts.

Concerning the evaluation descriptions themselves, each begins with a summary, followed by a general description of the process. After that is a brief analysis of the effort, including a discussion of the resources needed and the advantages and limitations. Finally, attachments are provided where appropriate as samples of data collection procedures and instruments.

In addition to the evaluation descriptions, several other types of information are provided in this package as references for the readers. Appendix A contains overviews of basic concepts in training evaluation, from the point of view of two agencies whose internal documents have general application: Department of Labor's Employment Standards Administration, and the National

Aeronautics and Space Administration.

Appendix B is a selected bibliography. While by no means a thorough listing of training evaluation books and articles, it can serve as a supplement to a training office's references.

Appendix C is a list of U.S. Office of Personnel Management contacts, including regional offices, that can be contacted for additional information on needs assessment and evaluation.

Readers are encouraged to share their experiences on the subjects of needs assessment and evaluation with OPM, which will in turn share useful information with others.

ACKNOWLEDGMENTS

The authors wish to thank the following staff from the agencies cited, for sharing their expertise and time:

Department of the Army (Test and Evaluation Command): Peggy Harmon

Department of Education: Terry Newell, Lucy McEligot

Department of Energy: Stephen Rosen

General Accounting Office: Steven Medlin

Internal Revenue Service: Marjorie Kupper

Department of Labor/Employment Standards Administration: Brendan Branley

National Aeronautics and Space Administration: Ellen Searcy

Naval Research Laboratory: Arthur Sass, William Brown

We would also like to thank the other agency people we contacted, who took the time to talk with us, as well as the following offices for reading, reviewing, and providing thoughtful feedback on the document:

Defense Mapping Agency: Ellen Roderick

Federal Aviation Administration: Barbara Wright

Internal Revenue Service: Gene Chufar

U.S. Office of Personnel Management, Office of Training: Program & Curriculum staff

Agency

Feature	Educ. (p. 6)	GAO (p. 31)	IRS (p. 57)	Labor I (p. 86)	Labor II (p. 102)	Navy (p. 110)	OPM (p. 118)
Used on new or existing course	existing	new	existing	new	new	new	either
Needs and/or task analysis	yes	yes	yes	yes	yes	yes	no
Course audience	supervisors (mostly new)	auditors; others	revenue agents (& other technical)	investigators, claims examiners (& other technical)	managers (teams)	scientists, technicians	various
Pre-course measure	no	yes (attitude; knowledge)	no	yes (self-rating)	no	no	no (one example-pre-rating)
End-of-course measure	no (action plan)	yes (attitude; knowledge)	yes (criterion referenced test)	yes (self-rating & case)	no (action plan)	no	no (action plan)
Follow-up method	I	Q; Ob	Q	Q	I; document review	I (group)	Q or I
Individuals contacted during follow-up	P	P; controls	P; S; and/or OJT coaches	S	P	P	P and/or S
What was (is) measured	perception re skill areas; return-on-investment	perception re use of skills; simulated case; observed behavior	perception re tasks; re trng. adequacy; re frequency performed	perception re tasks	extent plans carried out	perception re change, improvement	extent plans carried out; perception re change
Evaluators	InPlus	InPlus, Con	In	In	In	In	In (or other)

Codes

Follow-up method: Q = questionnaire; I = interview; Ob = observations
Follow-up contacts: P = participant; S = supervisor

Evaluators: In = totally in-house training staff; InPlus = in-house training staff plus others in agency; InCon = agency assisted by contractor

DEPARTMENT OF EDUCATION

EVALUATION OF THE BASIC SUPERVISORY TRAINING PROGRAM

SUMMARY

The Department of Education evaluated its basic supervisory training course using action plans and obtaining participants' perceptions of the use of skills from the course. Where possible, data was developed on return-on-investment (ROI), that is, how much performance improved as a result of the training compared to the resources consumed, in terms of dollars saved. The evaluation process also involved the training and use of volunteer line personnel, who had conducted the course, to collect information after the course on participants' application of the skills they had learned. A consultative relationship was set up between evaluator and participant, such that the evaluator not only collected ROI data, but also helped the participants diagnose problems in applying skills and assisted participants in taking action to attain better results in using what they had learned.

GENERAL DESCRIPTION OF THE EVALUATION METHOD

New supervisors throughout the Department of Education are required to take a 40-hour in-house supervisory course, "Working with Employees." The course particularly emphasizes communications skills. It also covers solving problems; improving productivity; dealing with EEO issues; planning, delegating, directing, and monitoring work; conducting meetings; and motivating employees. On-line since 1980, it is skills oriented and makes frequent use of case studies and role plays. Classes, which range in size from eight to fifteen people, are taught by a carefully selected and trained group of volunteer supervisors from the agency.

In order to determine if participants implemented skills learned in the course, if the course was worth the cost, and if the course itself needed improving, the training office (known as the Horace Mann Learning Center) developed an evaluation methodology. The consultant services of the Carkhuff Institute of Human Technology were used. The evaluation process included these features:

1. Using the volunteer trainers to gather data.
2. Taking a diagnostic approach as part of the evaluation, to determine the reasons for the training being less effective than intended, and to assist participants with making more effective use of skills learned in the course.
3. Developing return-on-investment (ROI) information, to show how much money was saved as a result of changed supervisory behavior.

The first section below describes the logic behind the ROI approach. Following that are the steps of the evaluation process itself.

Return-on-Investment Concept

ROI was defined as the ratio of performance achievement (output) to resources consumed (input). The ratio looks like this:

$$\text{ROI} = \frac{\text{output obtained}}{\text{input expended}} = \frac{\text{performance achievement}}{\text{resources consumed}}$$

The performance achievement part of the model was operationalized in the following way: Supervisors participating in the training program can use the skills they learn to attain a vast array of results (e.g., fewer errors, increased morale, reduced bias, more efficient procedures). The one common measure that can be used to reflect all types of results, and can also be compared with resources consumed, is dollars saved. The use of dollars as a standard measure can be expressed as follows:

Performance Achievements of Supervisor #1 = Dollars Saved From Result #1 + ... + Dollars Saved From Result #n

Performance Achievements of Training Group = Dollars Saved By Supervisor #1 + ... + Dollars Saved By Supervisor #n

Dollar savings can be derived from costs associated with equipment, facilities, materials, and personnel. Significant reductions in equipment, materials, and/or facilities costs resulting from training outcomes are rare, at least in the context of the Department of Education; the computation of savings from these sources is straightforward.

Personnel costs have proven to be the most common potential source of cost savings within the Department of Education. Reductions in personnel costs are best reflected in the amount of time saved. For example, fewer errors as a result of employee coaching means that less time is spent correcting work. The time saved from the result of fewer errors can be computed, then translated to dollars using the hourly pay rates of all the staff whose time is saved.

Increases in supervisors' skill use can result, too, in substantial savings through the identification of misuse of funds allocated in the forms of loans, grants, and contracts; e.g., problem-solving and communication skills could be useful in identifying and helping correct reasons for not spotting misdirected funds. Information on this type of savings is more difficult to obtain and verify but when uncovered is usually quite significant.

The resources consumed part of the model was developed using this approach: To be used in the ROI formula, resources consumed must be expressed in dollars. To achieve individual and organizational results, supervisors consume both training resources, plus whatever additional resources they require to make changes on the job.

$$\begin{matrix}\text{Resources} \\ \text{Consumed}\end{matrix} = \begin{matrix}\text{Training} \\ \text{Resources} \\ \text{Consumed}\end{matrix} + \begin{matrix}\text{Implementation} \\ \text{Resources}\end{matrix}$$

Costs for training and costs for implementation are derived from the same categories used to compute dollar savings (i.e., facilities, equipment,

materials, and personnel). The major cost for both training and implementation is personnel. In computing personnel costs, the time involved for all personnel is accounted for. For example, in computing training personnel costs, both the cost of instructor time and the cost of student time are included.

An example of the computation of return-on-investment for one supervisor and for an entire class is given in Attachment 1.

Evaluation Process

The evaluation of Education's supervisory course, "Working with Employees," involved these steps: developing the evaluation process and instruments; training volunteer evaluators; setting the stage in the class; gathering data and following up; and analyzing findings and developing recommendations. Each is described below.

Development of process and instruments - The evaluation process described here was developed after an earlier approach to follow-up with participants proved unworkable. The first effort involved forms which the participants (supervisors) were to use to tally the application of skills learned in training and to define the results obtained; these were to be filled in daily or weekly and to be collected after three months. However, supervisors tended not to recognize when they were using a new skill and not to use the forms to track changes they did recognize.

The revised process addressed these difficulties by relying on the evaluators to work with the participants after the course to help them determine when

they were using course skills and the effects of their use; to diagnose areas for potential behavioral change; and to determine how the supervisors could best use the skills to achieve change. A structured interview format guided the evaluator in obtaining the information from the participants about skill application, in doing problem diagnosis, in helping plan for successful skill application in one area of emphasis, and in developing benefits information leading to ROI analysis, if appropriate. (See below for more detailed explanation.)

Training of volunteer evaluators - In order to carry out the labor-intensive evaluation process, the course coordinator (who was also the evaluation coordinator) and one of the consultants trained four of the volunteer trainers as evaluators. However, this approach could be used for staff evaluators who did not actually teach the course but were willing to learn the course curriculum thoroughly.

The multi-phase training included attending the supervisory course in full and receiving instruction in training skills, in evaluation, and in consulting. The volunteers observed an interview of a participant conducted by the evaluation coordinator, then were observed themselves when they conducted their first interview. After their first interviews, meetings and debriefings were held, individually and as a group, to discuss the interview process. (Note: Each volunteer evaluator is now expected to follow up with a total of three course graduates after each course session.)

Setting the stage in the class - Participants were told at the end of the course that they should identify one course skill in particular that they

wanted to develop and apply on the job. They also were informed that the instructors would follow up with them to determine the value of the course in changing job behaviors and to assist them with any difficulties encountered in putting the course skills to work. (Details of the ROI were not explained to them until the actual interviews.)

Data gathering and follow-up activities - Approximately two weeks after the end of the course, each participant met with an evaluator who sought to find out if the supervisor was using course skills on the job and, if so, which ones and how frequently. The evaluator also obtained the reasons for using or not using the skills learned (see Attachment 2). In all cases supervisors had used some of the skills with, in most instances, positive results. Where supervisors had no, little, or poor results, the evaluator worked with them to address the reasons.

The evaluator then assisted supervisors to select one skill in which they particularly wished to improve and to develop a plan for behavorial change using that skill. Finally, the evaluator, also in concert with the supervisor, developed ways to measure the results of the new skill application. For example, supervisors wishing to improve their skills in communication might be encouraged to try using reflecting skills three times in each meeting with an employee and to note if the clearer understanding that resulted led to time savings by virtue of eliminating the need to redo work and to meet again.

The evaluators returned to the participants about two months after the initial post-course discussion, to obtain specific results of attempted change for

translation into cost savings. At that time the evaluator provided additional advice to the participants if the situation warranted. (See Attachment 1 for examples of participant changes made and resulting savings.)

Analysis of findings and development of final recommendations - The Training Director and Department management, rapidly becoming too sophisticated to accept "smile indexes" of success, are now demanding evidence of increased productivity from training. The ROIs developed, even when calculated conservatively, provide firm evidence of such results.

The data and recommendations generated have been and will be given in the future both in oral and written formats to the Training Director and the Deputy Under Secretary for Management. The first ROI computed justified the decisions to continue using a tailored in-house course versus an outside course, in-house volunteer trainers rather than consultants, and a course six days in length rather than a shorter one.

Analysis of the findings also clearly indicated improvements to be made within the course (e.g., creating a more problem-solving context for communications skills and using more case studies), which were then incorporated in the course in hopes of increasing the ROI in the future.

The ROI evaluation model will be implemented on a yearly or semi-yearly schedule. Should the ROI drop, it could be increased by decreasing the implementation costs (e.g., shorten the course) or increasing the savings (e.g., focus only on skills that yield clear savings).

ANALYSIS OF EVALUATION METHOD

Conditions for use

- Management support to allow for the evaluators' and the course graduates' time.
- A training office concerned about obtaining specific evaluation data and willing to support the evaluation coordinator's efforts.
- Evaluators who are knowledgeable in the process and content of the course.
- For volunteer trainers, training as necessary in interviewing, problem solving, and consulting techniques.
- Also for volunteer trainers, the motivation to continue working with course participants and to carefully gather information which will be useful for evaluative purposes.
- An evaluation coordinator able to oversee the efforts of the volunteer evaluators.
- A system for rewarding volunteer trainer/evaluators (examples are cash awards, letters of commendation) and their supervisors.
- Interview guides for the evaluators.

Resources required

The individuals involved in the evaluation are a coordinator (who is a full-time training staff member and who may also carry out follow-up activities as well as oversee the efforts of the volunteers) and volunteer evaluators (volunteers in the sense that evaluation is not part of their usual job). Time is the main resource needed. The coordinator may spend up to three staff days designing and conducting training for volunteers who need interviewing

and other skills, then conducting interviews (observed by the volunteers), observing their interviews, and debriefing the volunteers. The evaluators in turn may need about a day's worth of training, including formal sessions, observations of interviews, debriefings, and conducting an interview independently while being observed.

For the time required to evaluate one course, the coordinator would need about two staff days in the administration of the process and preparing a final report, while the evaluators would need about a staff day to conduct three interviews each and brief the coordinator. The coordinator may also find it necessary to put more time into training and debriefing the evaluators, depending on their skill level.

No statistical knowledge is required on the part of any of the individuals.

Nature of information produced

As originally conceived, this evaluation process was designed to collect return-on-investment information - the costs vs. the benefits of the training course. The interview process also provides information on: a) problems that course participants routinely face on the job, and the general context in which they have to perform their work; b) problems course graduates experience specifically in practicing course skills on the job and the causes for such problems (e.g., lack of supportive managerial climate; lack of understanding of how to use the skills; lack of comfort or experience in using the skills); c) reactions to the course and the trainers, from the vantage point of being back on the job for a period of time.

Advantages

- Provides supportive data for the course, for the training function to give to top management.
- Motivates participants to continue using skills they learned, as they are helped to see clear evidence of results.
- Provides help to participants experiencing difficulty using course skills back on the job, thus increasing transfer of learnings to the job and thereby the effectiveness of the course.
- Provides additional information to the trainers on the relevance of course skills taught and the context in which they are used.
- Develops an ongoing consultative relationship between course graduates and the evaluators, thus giving the participants a source to turn to for assistance if problems or questions arise.
- Motivates course instructors as the information on positive results from the training lets them see firsthand the impact of their efforts.

Limitations

- Participants' own abilities to recognize when they have been applying skills learned in the course, along with the training office's having to rely on participants' judgments about the results from using new skills.
- Heavy reliance on interviewers to draw accurate information from the participants and assist the participants in developing the required data.
- Absence of work tracking and measurement systems as sources of data.
- Limited time that can be asked of volunteers to gather data, and that can be asked of participants to provide information. (Experience has shown, however, that participants have been cooperative in the evaluation effort.)

- Potential bias of instructors' interviewing participants and seeking examples of changes attributable to training, in order to prove course worth.

It should be noted that, despite these limitations, even when conservative estimates are used to derive ROI figures, impressive results have been shown (see example in Attachment 1). Indeed it is wise to make conservative estimates to offset criticism of the data's subjectivity.

Reference

Lucy McEligot
Horace Mann Learning Center
U.S. Department of Education
3700 Donohoe
400 6th Street, SW
Washington, DC 20202
(Phone: (202) 245-2481)

ATTACHMENT 1

RETURN-ON-INVESTMENT

CALCULATIONS

Return-on-Investment Calculations

An example of the computation of return-on-investment for one supervisor is the following:

Result #1:
- o Skills used - Interpersonal and time management
- o How used - To develop procedural changes
- o Result - Time reduced one-third for each technician
- o Total Savings - 3,000 technician hours per year @ $5.50 per hour

Result #2:
- o Skill used - Controlling
- o How used - To establish phone monitoring system
- o Results - 10 logged phone calls per day eliminated at 3 minutes each; 5 non-logged phone calls per day eliminated at 10 minutes each
- o Total savings - 333 hours of clerical time per year @ $5.50 per hour

Performance Achievement:	Dollars Saved From Result #1 ($16,000)	+	Dollars Saved From Result #2 ($1,831)	= $18,331

Training Resources:	o 48 hours of supervisor training time @ $15.00 per hour o 18 hours of instruction time @ $17.50 per [illegible] (a total of 144 instructor hours were invested in 8 participants)
Implementation Resources:	o 16 hours of supervisor time per year @ $15.00 per hour o 80 hours of technician time per year @ $7.50 per hour o 32 hours of clerical time per year @ $5.50 per hour
Resources Consumed:	Training Resources Consumed ($1035) + Implementation Resources Consumed ($1016) = $2,051
ROI:	$\frac{\$18,331}{\$\ 2,051}$ = ROI of 8.9 to 1

In computing the ROI, it should be noted that a standard period of time must be selected. In the example, the time period selected was one year.

The computation for a group of eight course participants can be done as follows:

Results from Each Supervisor:	Supervisor #1:	$37,125
	Supervisor #2:	$18,331
	Supervisor #3:	$ 3,125
	Supervisor #4:	$10,000
	Supervisor #5:	None
	Supervisor #6:	None
	Supervisor #7:	Not available
	Supervisor #8:	Not available
Performance Achievement:	Dollars Saved by Supervisors 1 to 8	= $68,581
Training Resources:	o 384 hours of supervisor time @ $15.00 per hour	
	o 144 hours of instructor time @ $17.50 per hour	
Implementation Resources:	Supervisor #1:	$5,000
	Supervisor #2:	$1,016
	Supervisor #3:	$ 400
	Supervisor #4:	$1,500
	Supervisor #5:	$ 175
	Supervisor #6:	None
	Supervisor #7:	Not available
	Supervisor #8:	Not available
Resources Consumed:	Training Resources Consumed ($8,280) + Implementation Resources Consumed ($8,091)	= $16,371

ROI: $\frac{\$68,581}{\$16,371}$ = ROI of 4.2 to 1

Two points need to be made in regard to the above example. First, all training participants were used for the computation of the ROI -- even the two participants for whom results were not available. If these two supervisors are eliminated from the training resources equation, then the ROI improves to 4.6 to 1. Second, the life cycle model of computing training costs indicates that there are three distinct stages:

Start-up stage - When the program is being developed.

Transition stage - When both new programs and old programs are being run.

Steady-state stage - When the program is fully operational and changes are minimal.

The above examples have been based on a "steady-state" stage. If it were desirable to do so, start-up costs for design and development would be determined and a share allocated to an individual trainee and/or a training group; this would have significantly reduced the ROI for the initial group cited but not for later groups where start-up costs no longer apply. (Alternatively, start-up costs could be amortized over the length of the use of the course, thus minimizing their impact on any one course offering. This is probably a more realistic approach and more closely parallels private sector business practices.)

ATTACHMENT 2

FOLLOW-UP INTERVIEW FORMS

Providing Assistance To Supervisors Who Took the Course: "Working With Employees"

(For trainers interviewing supervisor trainees)

Is the supervisor using the course skills ? (Page 2)

Supervisor is not using Course skills

1. Identify the reasons. (Page 2)
2. Address the reasons. (Page 3)
3. Develop a plan. (Page 4)

Supervisor is using Course skills

1. Indicate frequency of use. (Page 2)
2. Identify reasons for use. (Page 2)

Supervisor has results

1. Identify the effects. (Page 5)
2. Compute the benefits. (Page 5)
3. Consider an additional plan. (Page 4)

Supervisor has no results

1. Diagnose the situation. (Page 6)
   - Identify problem skill
   - Identify reason for use:
     - Problem/need
     - Other
   - Pinpoint problem:
     - What's happening
     - What want to happen
   - Identify reasons for problem
     - Reasons
     - Suggestions
2. Refine the plan. (Page 4)

Providing Assistance To Supervisors Who Took
The Course: "Working with Employees"

Supervisor_____ Position_____ Date_____

Interviewer_____ Unit_____ Grade Level_____

Your use of course skills:

Course Skill	More than once a day	Once a day	Less than once a day but more than once a week	Once a week	Less than once a week	Not at all	For each skill write below a reason for the supervisor using (e.g., action plan developed, immediate need, special interests) or not using (e.g., not enough time, not motivated, don't understand the skill, not relevant, no opportunity) the skill. Reasons:
1. Communication	_____	_____	_____	_____	_____	_____	1. _____
2. PRD .Solving performance problems .Setting work expectations	_____	_____	_____	_____	_____	_____	2. _____
3. EEO	_____	_____	_____	_____	_____	_____	3. _____
4. Planning .Short-term .Long-term	_____	_____	_____	_____	_____	_____	4. _____
5. Directing .Making assignments .Conducting meetings	_____	_____	_____	_____	_____	_____	5. _____
6. Controlling .Monitoring work .Motivating employees	_____	_____	_____	_____	_____	_____	6. _____

Developing a Plan For The Supervisor Who is not Using The Course Skills

The supervisor is not using any of the course skills. Below are suggestions for addressing some of the reasons for the supervisor not using the skills. Review these reasons with the supervisor and develop a plan by filling in the rest of this page and the following page.

Reason	Suggestion
1. No time available, overloaded with work.	1. Try a very small part.
2. No action plan from the course.	2. Develop an action plan.
3. Do not understand the area.	3. Review the material.
4. No need at this time.	4. Plan improvements.
5. Not motivated.	5. Try a very small part that interests you.
6. No support from superior.	6. Meet with superior and try a small part.
7.	7.
8.	8.

Skill	Reason	Suggestion

Developing a Plan to Use Course Skills on the Job

In the spaces below, develop a plan for the supervisor to use one of the course skills on the job.

Indicate the skill to be used:
Indicate the reason the skill is to be used:
If possible, tie the reason to a performance problem (individual or unit).
Develop the plan. What: With Whom: [Self/employees (no.)] Steps: Time Frames:

Recording the Results of Using the Course Skills on the Job

Indicate below the results the supervisor has had in using the course skills on the job. Also determine the benefits based on the results.

Effects:

What Happened? To Whom? How Often?	Average Time Savings X	Number of Instances -	Time To Plan =	Benefits

1. Refer to page 4 for developing plans for other course areas.
2. Refer to page 6 for problems that you may have.

Diagnosing the Problem for the Supervisor Who Has No Results in Using Course Skills.

Ask the supervisor the questions below in order to address the skills for which the supervisor does not have results.

1. With what skills are you having a problem?

2. What is your reason for using this skill?
   - A specific need or problem:
   - Other

3. What are the effects that you are not achieving?
   - What is not happening?
   - What do you want to happen?

4. What are the reasons for the problem?

   Here are some examples.

Reasons:	Suggestions:
1. Your understanding of the area.	1. Review the material.
2. You are looking for inappropriate effects.	2. Revise purpose.
3. Your superior is not supportive.	3. Meet with your superior and/or simplify plan.
4. Employees are not motivated.	4. Meet with employees and/or simplify plan.

Diagnosis Cont'd.

What are the reasons?	
Your reasons:	Suggestions:
5. If revisions in your plan are required, use page 4.	

U.S. GENERAL ACCOUNTING OFFICE

EVALUATION OF THE SKILLS FOR PERFORMANCE AND CAREER DEVELOPMENT COURSE

SUMMARY

GAO developed a course to train their auditing staff in interpersonal problem-solving processes and to enable individuals to use the skills learned in various agency-specific settings. An extensive evaluation was carried out to assess participant reactions to the course and knowledge gained (course process measures) and participant application on the job of skills learned (course product measures). Various control groups were used to determine, for instance, the influence of the course on behavior, relative to other interventions such as "sensitizing" individuals to the subject matter. Results of the evaluation were used for a variety of purposes, including modifying offerings of the course for other GAO staff, determining use of skills in the agency, and showing the value of internal evaluation.

GENERAL DESCRIPTION OF THE EVALUATION METHOD

During the late 1970's, the General Accounting Office (GAO), by direction of the Comptroller General, developed a training course called Skills for Performance and Career Development (SPCD). Its purpose was to impart generic interpersonal communication skills which could be used in a variety of counseling situations. The audience attending the course included almost all GAO auditors/evaluators and many support staff, numbering over 3000 individuals.

The objectives of the four-day workshop (which was offered over 200 times) were to enable participants to:

1. Learn about effective and ineffective communications skills.
2. Practice the effective skills.
3. Apply the skills to performance coaching and counseling (including personal problem identification), career counseling, performance appraisal, and small group problem-solving situations.

Using written materials, lectures, large and small group discussions, role-playing, and video-taped illustrations, the workshop was designed to use participants' own experiences and to ensure direct applicability of learning to the GAO organization. The participants continually received feedback on their competencies through audio and video replays. Part of the learning process was participants' keeping daily logs on what they were learning and how they would apply that to their own jobs.

In order to implement the SPCD course on the massive scale desired, external consultants and internal personnel were trained by going through the course, then by receiving instruction on how to conduct the course themselves and how to administer the evaluation instruments. Classes were given in Washington, DC, and in various regional sites. While an observer from the central training staff watched many of the sessions, no attempt was made to standardize the specific course content or presentation style. Thus while the basic SPCD skills were to be covered each time, the implementation of the course varied from session to session.

The evaluation design for SPCD was started after the course was being delivered. Both the course "process" (in-course training) and "product" (use of skills in the GAO setting) were assessed. The process was assessed at two levels - participants' reactions to the course and the amount of information gained during the course. The product or outcome was measured by looking at behavior change after the course. Because of the timing of the evaluation start-up, the results were not intended to change the original SPCD course as it was being offered. Rather the purposes of the evaluation were to:

1. Indicate changes which should be made in other SPCD programs, e.g., one for non-auditors and one for new auditor staff.
2. Assess the impact of the program on the awareness and use of interpersonal skills in the agency (as a prelude to introducing performance appraisal and coaching systems into the agency).
3. Reinforce the agency's perception of the importance of the skills taught.

4. Demonstrate the feasibility and value of internal evaluation programs.

The following describes the evaluation efforts for both the process and product of the SPCD project, including the means for collecting and analyzing the data.

Evaluation of the SPCD "Process"

Design - In order to understand the effectiveness of the training process, four groups were used - an SPCD group, a Sensitized Awareness Group (SAG), a control group, and a post-test only group. The characteristics of each were as follows.

The SPCD group took the pre-test at the start of the course, completed the four days of training, and took the post-test at the end of the course. The Sensitized Awareness Group (SAG) took the pre-test, received "sensitizing" instructions that made participants aware of interpersonal problem-solving and communication skills without providing training in the skills, and took the post-test four days later. The control group took the pre-test and four days later, the post-test; this group was used to assess the stability of the measuring instruments over time and repetition. The post-only group did not take the pre-test but did complete the full four-day course and took the post-test at the end; they served as a comparison group for the SPCD group to see the effects of taking the pre-test on the impact of the course itself.

Data collection instruments - The instruments used to evaluate the course process were developed based on the course objectives, the methods used to

accomplish those objectives, and the design of the course. The instruments (pre-test and post-test were identical) included a Belief Questionnaire, an Information Assessment Questionnaire, and an Observation Exercise, as well as a Course Evaluation Form. Their characteristics are summarized in the following chart.

Data Collection Instruments (SPCD "Process")

Instrument	Information obtained	When given
Belief Questionnaire*	- attitudes about course content - attitudes about status of communication skills at GAO - attitudes about status of personal communication skills	pre-test & post-test
Information Assessment Questionnaire*	- measures of knowledge and comprehension of SPCD skills - measures of ability to apply SPCD skills	pre-test & post-test
Observation Exercises*	- measure of ability to recognize SPCD behaviors in simulated GAO setting	pre-test & post-test
Course Evaluation Form	- impressions about instructor competence - impressions about instructor effort - impressions about value of specific aspects of the course - impressions about overall value of the course	post-test

*See Attachment 1 for examples of the first three instruments.

Data analyses - The course process evaluation used over 2000 sets of completed data forms (from the four experimental groups). Answers were computer-tabulated, using a specially designed program. For each participant the mean of all responses related to a particular type of information, or subscale, was computed and these means were used for analysis purposes. For instance, the effect of giving a pre-test on post-test performance was examined, comparing the post-test only group to the SPCD group. An important analysis was looking at the effects of the course itself on knowledge, attitudes, and skills.

While statistically significant differences were shown for those who took the course versus the comparison groups, the results could have been due to the large sample size; the differences in the numbers themselves were not very large and hence did not seem of practical importance. Therefore the evaluators did further analyses to assess the influence of the sample size. Results pointed to one particular area of practical significant difference between those who took the course and those who did not (ability to apply communication skills in simulated interpersonal encounters, from the Observation Exercises). Finally, the results of the course evaluation form were calculated. These results were also correlated with responses on the other course process measures, to determine the relationship between how participants felt about the course and how much knowledge, skill, and attitude change occurred.

Evaluation of the SPCD "Product"

Design - Because the goal of the SPCD program was to improve the interpersonal problem-solving and communication skills of participants, efforts were made to assess the impact of the course on behavior in the GAO environment. To do so,

two types of data collection processes were used - a Follow-up Questionnaire and an Observation of three audit teams.

Data collection instruments and data analyses: Follow-up Questionnaire - A Follow-up Questionnaire was sent to GAO employees eligible for the SPCD program, whether or not they had attended the training (so that comparisons on knowledge and skill could be made between course participants and those who had not attended). The questionnaire was sent out about nine months after the beginning of the training implementation. In addition to demographic data, the questionnaire consisted of three major sections. The first requested self-reports about the frequency of attending meetings, the use of interpersonal skills, and interpersonal effectiveness, in five GAO organizational settings. These settings, e.g., audit team meeting, agency meeting, personal problem-solving session, were selected because they occurred relatively often, were more or less mutually exclusive, and covered most of the interpersonal, job-related encounters a GAO employee was likely to experience.

The second part of the questionnaire, answered by SPCD participants only, requested self-reported awareness of communication behaviors used by themselves and by others, and perceived course benefit.

The third section asked respondents to apply communications skills in five simulated interpersonal problem-solving situations, by having them check what they felt would be an appropriate response to sample employee statements about problems. (See Attachment 2 for Follow-up Questionnaire statements.) Definitions were provided to respondents on the various terms used in the questionnaire.

Data from the questionnaire were summarized by looking at all SPCD participants, at all non-SPCD respondents, and at SPCD participants who had taken the course six months previously. Data from the last group was directly compared to responses of the non-SPCD group, as the non-participants were instructed to respond to the questionnaire based on their experiences for the last six months only. Analyses included frequencies with which the respondents reported being in the five organizational settings and, for each setting, summaries of the kinds of communication behavior the respondents reported using. Statistical analyses were also done to compare responses among the three groups.

Responses on the self-assessment of interpersonal effectiveness were summarized to show the extent to which course participants saw themselves as changing in effectiveness in different organizational settings. Perceptions of course benefits and awareness of communication behaviors were also tabulated in a straightforward way.

The third section of the Follow-up Questionnaire used the same five items as on the pre- and post-test to assess the ability to apply communication skills to simulated interpersonal encounters. SPCD participant responses were compared to responses of non-participants to determine statistical significance.

Data collection instruments and data analyses: Observation of audit teams - To obtain additional data about the use of communication skills in the GAO environment, three audit teams were selected for observation: One in which the team members had completed the course; one in which the team members were

aware that communication skills were being observed but had not taken the course (SAG); and one in which team members had not taken the course and did not know why they were being observed (control). Observers were trained in observation techniques and SPCD skills. Structured forms were used during the observations to capture such information as type of meeting being observed and specific behaviors exhibited. Observers were to look for five positive skills taught in the course and five negative behaviors which, if present, would impede the interpersonal problem-solving process from occurring. Observers contacted the audit teams to find out about scheduled meetings, with the audit group letting the observers know about any meetings scheduled on short notice.

Analyses were made of the frequency of meetings of different types among the three groups observed, as well as the rate of behavior occurrences per minute, for positive and negative behaviors. The types of behaviors observed were compared with the results of the Follow-up Questionnaire.

Final Report

A report covering all aspects of the evaluation - process, findings, analysis, recommendations, instruments - was prepared and presented to the agency's top management. Abbreviated versions of the report were presented to other levels of management and the agency as a whole. The audit teams used in the follow-up observation, the course instructors, and the others involved in the project were debriefed and informed of the results. Results were used to redesign the SPCD course for later audiences and to reinforce SPCD skills in subsequent managerial/supervisory/executive development programs and during the implementation of the agency's performance management system.

ANALYSIS OF EVALUATION METHOD

Conditions for use

- Support by management for the time to design and implement an evaluation of such extent.
- Involvement of evaluation staff early in the process of designing the course.
- Resources which can be tapped for assistance in questionnaire design, sampling, and analysis techniques.
- Cooperation among those consulting on the evaluation, those conducting the evaluation, and the instructors, as well as the participants (and their supervisors).
- Instruments specifically designed for the agency's environment and based on course objectives. Lead time to pilot-test instruments.
- Staff which can be made available and trained specifically to help with a large-scale evaluation, or ability to hire outside consultants.

Resources required

The time of the evaluators to design and implement the evaluation process and to analyze the results, is the primary resource required. Also, if sampling of participants and statistical analyses of data are to be done, expertise in these areas needs to be available; if the training staff does not have this skill, individuals outside the training office or the agency can be used to assist the evaluators. The statistical analyses are straightforward for the most part and standard statistical approaches can be modified for specific data analysis needs. A small amount of time is needed on the part of instructors and participants in fulfilling the requirements of the evaluation

process. If observations are included in the design, individuals need to be trained to perform this task with consistency and reliability. If a large sample is to be used, a computer program to process the data can save considerable time in the long run.

Nature of information produced

With the design used at GAO, evaluative data are produced at three levels - attitudes of participants about the usefulness of the course, knowledge changes, and use of skills on the job. As a check on the effect of the course itself, comparisons can be made between groups of participants and certain comparison groups (e.g., those without the training; those sensitized by receiving information on the subject without formal training). The evaluation instruments also produce information on how respondents felt about using communication skills themselves and the impact that that has had on their performance. The information is derived in different ways - self perceptions, written tests, and observations by trained individuals who were not GAO employees. The information produced is quantitative and includes descriptive and inferential statistics.

Advantages

- Using comparison groups as a means to control for certain variables (such as the effect of taking a pre-course test on the course's effectiveness) allows stronger conclusions to be drawn.
- Obtaining evaluation information from different sources and by different data collection processes enables verifications to be made.

Limitations

- The need for measurement expertise to design and implement instruments and tabulate results.
- Extensive lead time and resources required to carry out a large-scale evaluation (sampling would diminish this need to some extent).
- With the evaluation process begun after-the-fact, limited use of the results for modifying the ongoing training (can be used in future offerings and offerings for other audiences).

Reference

Dr. Steven M. Medlin

Room 7840

GAO Building

441 G Street, NW

Washington, DC 20548

(Phone: (202) 272-3162)

ATTACHMENT 1

EXAMPLES OF DATA COLLECTION

INSTRUMENTS USED

(SPCD "PROCESS")

SPCD TRAINING COURSE

PRECOURSE EVALUATION

/ / / / /
1-4

IDENTIFICATION CODE: (Last four digits of your home telephone number. Please record here and in your notebook for future reference.)

/ / /
5-6

DIVISION/OFFICE/REGION (Insert the name of your division, office, or region in the space below and insert the code number in the 2 boxes to the left as given by the instructor.)

/ /
7

CURRENT GS GRADE LEVEL (Insert the number (1-6) of the category in the box.)

1. Grade 6 or below
2. Grade 7 or 9
3. Grade 11
4. Grade 12
5. Grade 13 or 14
6. Grade 15 or above

/ 1 /
8

Card 1

BELIEFS QUESTIONNAIRE

This is a questionnaire which samples the opinion and sentiment of individuals toward various statements dealing with human resource development. Please respond to each statement by giving as accurate a representation of your beliefs as is possible.

BE SURE TO READ EACH STATEMENT CAREFULLY AND THEN INDICATE YOUR OPINION BY CHECKING ONE OF THE BOXES NEXT TO EACH STATEMENT.

	Strongly agree 1	Mildly agree 2	Agree & disagree equally 3	Mildly disagree 4	Strongly disagree 5	
(1) Establishing an atmosphem of comfort and trust is crucial in any kind of extended interpersonal problem solving interaction.						(9)
(2) Paraphrasing or restating what another person has said is the best way to encourage the other person to continue talking.						(10)
(3) The most important goal of problem solving is that the person with the problem acknowledge it as his/her own.						(11)
(4) Effective use of problem solving skills greatly aids your efforts to make on the job contact with people more productive.						(12)
(5) Helping people to develop skills can only take place when both people involved believe that the one being coached is able and willing to develop the skills in question.						(13)
(6) Respect is the common denominator of all effective helper behaviors.						(14)
(7) Special skills are required to positively influence an interaction which is centered on a problem.						(15)
(8) GAO audit staff operate at a high level of interpersonal competency.						(16)
(9) A training course on interpersonal communication and interpersonal problem solving only gets in the way of the "real" work of GAO.						(17)
(10) Any person hired by GAO in an audit position possesses the necessary characteristics to be able to communicate effectively.						(18)
(11) I am currently very aware of how skillful I am at performance counseling (conversing with others about their feelings or personal matters as they relate to the person's performance).						(19)
(12) My personal skills at performance counseling are highly developed.						(20)
(13) I am currently very aware of how skillful I am at interpersonal communication.						(21)
(14) My personal skills at interpersonal communication are highly developed.						(22)
(15) I feel very confident that I can be successful at applying appropriate skills when engaged in performance counseling and interpersonal communication.						(23)

PRECOURSE

INFORMATION ASSESSMENT

Instructions:

This assessment is designed to measure a person's understanding about interpersonal communication skills prior to participating in this course. At the conclusion, a similar assessment will be performed to determine how effective the course was at increasing the participants' knowledge and awareness of interpersonal skills.

The assessment has 2 sections each with a number of items. Read each item carefully, apply whatever information is appropriate, and select the one response which best completes or answers the question. Check the box in front of the response you select.

Make sure you answer every item.

Just before you begin to take the assessment, record the time under Time Started. When you have completed it, record the time under Time Stopped.

Time Started: _____ Time Stopped: _____

/ / /
(24-25)

(Excerpts) **PRECOURSE**

INFORMATION ASSESSMENT

1. Effective communication among GAO staff can only occur when the individuals involved are willing and able to: (Check one) (26)

   1. ☐ Communicate needs.
   2. ☐ Clearly understand expectations.
   3. ☐ Identify skills for performance enhancement.
   4. ☐ Resolve interfering work related problems.
   5. ☐ All of the above.

2. It is important to GAO that employees have efficient helping skills because these skills: (Check one) (27)

   1. ☐ Impact on the mental health of the organization.
   2. ☐ Provide a stimulating and encouraging experience for managers.
   3. ☐ Decrease the likelihood that managers will create further interpersonal problems.
   4. ☐ (2) and (3) only.
   5. ☐ (1), (2), and (3).

3. All of the following are reasons why the generic model for interpersonal help has special value for management except: (Check one) (28)

   1. ☐ It provides a guide for the helping process.
   2. ☐ It prevents frustration of the process.
   3. ☐ It assists the manager to project his/her own needs into the process.
   4. ☐ It provides a definition of core skills needed in the helping process.
   5. ☐ None of the above.

4. All of the following are effective kinds of helper responses except: (Check one) (29)

   1. ☐ Asking "why" questions.
   2. ☐ Focusing on aspects of the problem.
   3. ☐ Focusing on characteristics of the person.
   4. ☐ (1) and (3).
   5. ☐ None of the above.

5. Which manager behavior would best accomplish a successful interaction with an employee centered on a problem, so that the employee has the experience of being valued? (Check one) (30)

   1. ☐ Telling the employee between phone calls that he/she should get right to the point.
   2. ☐ Telling the employee to come into the office and then closing the door.
   3. ☐ Sitting on comfortable chairs on opposite sides of the room from one another.
   4. ☐ Talking with the employee from behind a desk.
   5. ☐ Sitting on a couch right next to the employee.

Observation Exercise

Instructions:

You are about to participate in an observation exercise. The purpose of this exercise is to determine how skillful you are at identifying certain types of communication behavior in other GAO audit staff, which you will witness interacting on the TV monitor in a moment. Both the content and the nature of this interaction are fictional. However, it does represent a possible discussion that might occur between audit team members.

On the next page you will first find a list of communication behaviors and their definitions. When you turn this page, carefully read over this list with their definitions. After this, you will observe an interaction of an audit team and indicate which of these communication behaviors you witnessed the team display.

The interaction will be replayed and stopped at 30 second intervals. At the end of each 30 second interval, you will scan the list of communication behaviors on the Observation Sheet and indicate their presence or absence for each interval indicated. If you observed the presence of any amount of a behavior in an interval, you simply place the number one (1) in the box on the Observation Sheet that corresponds to the behavior observed. If you did not observe any occurrence for a particular behavior in that interval, place the number zero (0) in the box on the Observation Sheet that corresponds to the appropriate behavior. For each observation interval every communication behavior needs to have either a (1) or (0) in the appropriate box on the Observation Sheet.

If you have any questions about the procedure, ask the instructor to clarify them for you before you begin the exercise.

/ / / / / ID CODE
1-4

/ / / DIVISION/OFFICE/REGION
5-6

/ / GRADE CODE
7

/ 2 / Card 2
8

DEFINITIONS OF COMMUNICATION BEHAVIORS

1. **Acknowledging**——These are the grunts or nods of communication. They include simple verbal behaviors like "uh huh", "right", "yes", "O.K.", and others, as well as a positive nod or movement of the head.

2. **Centering**——Identifying and commenting on the strengths of another. Referencing of specific achievements is also appropriate.

3. **Checking**——Summarizing what another has said, or requesting clarification. Also, testing what you think you heard from another.

4. **Judging**——Any response that could prompt the other person to call her/himself into further question, and that interferes with the development of the helping process; (i.e., "You're inadequate"; "Basically you're doing well").

5. **Probing**——Open-ended and focused questions which elicit more information on previously mentioned material, or requesting another to explore a particular area.

6. **Reflecting**——The accurate identification of another's feelings and/or the content of the message and the reflection of feelings and content. Refers to the explicit message sent.

---

1 = Observed
0 = Not observed

Communication Behavior	Observation Interval 1	2	3	4	5	6	7	8	9	10	11	12	
Acknowledging													(9-20)
Centering													(21-32)
Checking													(33-44)
Judging													(45-56)
Probing													(57-68)
Reflecting													(69-80)

ATTACHMENT 2

SPCD FOLLOW-UP QUESTIONNAIRE

IDENTIFICATION INFORMATION

Enter the identification information requested below.

1. Identification Code ____ (1-4)

   Enter the four digit identification code (the last four digits of your home telephone number) that you were asked to use during training. If you did not use your home telephone number and can not remember your substitute code, please look to see if you put it somewhere in your SPCD materials. If you cannot locate or recall the identification code you used, please enter 9999.

2. Region/Division Code ____ (5-6)

   Enter your region or division code. (They are listed below.)

Headquarters		Field			
01	Community and Economic Development Division	13	Atlanta	30	Panama City
02	Energy and Minerals Division	14	Boston	31	Other (please specify)
03	Federal Personnel and Compensation Division	15	Chicago		
04	Field Operations Division (HQ)	16	Cincinnati		
05	Financial and General Management Studies Division	17	Dallas		
06	General Government Division	18	Denver		
07	Human Resources Division	19	Detroit		
08	International Division	20	Kansas City		
09	Logistics and Communications Division	21	Los Angeles		
10	Office of the General Counsel	22	New York		
11	Procurement and Systems Acquisition Division	23	Norfolk		
12	Program Analysis Division	24	Philadelphia		
		25	San Francisco		
		26	Seattle		
		27	Washington		
		28	Frankfort		
		29	Honolulu		

3. Training Elapse Time ____ (7-8)

   Enter the number of months that have elapsed since you attended the SPCD course. If you have not taken the course, enter the number "88."

4. Grade Level ____ (9-10)

   Enter your current grade level.

5. Job Function ____ (11-12)

   Enter your job function code. (They are listed below.)

Job Function		Series	Job Function		Series
01	Adjudicator	950	10	Management Auditor	343
02	Administrative Officer	341	11	Mathematical Statistician	1529
03	Auditor	510	12	Operations Research Analyst	1515
04	Computer Scientist	334	13	Senior Analyst	101
05	Data Transcriber	356	14	Social Scientist	107
06	Editor	1082	15	Statistician	1530
07	Industry Economist	110	16	Supervisory Program Analyst	345
08	Management Analyst	343	17	Supervisory Statistician	1530
09	Management Assistant	344	18	Other (specify)_____	

DEFINITIONS OF ORGANIZATIONAL SETTINGS

1. Audit team meeting

   Individuals occupy this setting whenever two or more persons of an audit team come into face-to-face contact with one another to deal with organizational, administrative, or technical aspects of an audit. The scope of such meetings could be varied in nature and could range from negotiating team agreements and planning to reviewing and discussing audit information collected on a day-to-day basis.

2. Agency meeting

   Individuals occupy this setting whenever one or more persons from an audit team come into face-to-face contact with individuals from the agency or area on which the audit is being performed. Illustrations of such meetings would include entrance conferences, agency interviews, and exit conferences.

3. Personal performance and development session

   Individuals occupy this setting whenever one individual comes into face-to-face contact with a supervisor and obtains feedback and/or information regarding his/her job performance or his/her personal development within the agency. Meetings dealing with performance appraisal, coaching, and counseling, as well as those focusing on career planning would qualify as meetings which would be appropriate for this category.

4. Staff meeting

   Individuals occupy this setting whenever three or more individuals from a given organizational unit (e.g. regions or divisions) come into face-to-face contact with one another to deal with issues, tasks, or problems directly relevant to that orgainizational unit. Large annual or quarterly staff meetings involving practically all individuals in the unit to more limited ones such as EEO staff meetings would be appropriate for this category.

5. Personal problem solving session

   Individuals occupy this setting whenever one individual comes into face-to-face contact with another and receives advice or information on how to better handle personal problems related to such themes as alcohol, drugs, health, family, etc.

DEFINITIONS OF COMMUNICATION BEHAVIORS

1. Using Body Attention. The use of one's body to convey that one is interested and concentrating on what is being said, such as leaning slightly toward the individual or establishing eye contact.
2. Being Genuine. Those behaviors which convey sincerity, that the person is being his or her "real" self and that helping is not a special role.
3. Inviting. Those verbal responses which request another to begin or continue.
4. Acknowledging. Grunt and nod communication responses like "yes", "uh huh", "O.K.", etc., that tell the individual attention is being paid to what is being said.
5. Reflecting. Feeding back to another the feelings and/or the content of a message.
6. Self-Disclosing. Briefly sharing a similar experience from one's own life to encourage further exploration of the problem.

DEFINITIONS OF COMMUNICATION BEHAVIORS (continued)

7. Using Immediacy. Pointing out "here and now" behaviors and feelings to illustrate a point, to explore the nature of a relationship, or to let another know how you're feeling. Example: "I'm feeling a bit confused right now." or "I don't know what questions I should be asking you right now".

8. Probing. Asking open-ended and focused questions which elicit more information or request further exploration of a particular area.

9. Checking/Clarifying. Use of the short restatements of what the other has said (1) to be sure that the message has been understood and interpreted correctly, and (2) to maintain contact.

10. Problem Stating. Developing statements which accurately describe some condition that is to be changed.

11. Action Planning. Collaboration with another to develop action plans. Action plans may include training, practice, homework, contracts, etc.

12. Summarizing. Re-capping or listing the major points and conclusions covered during your conversation. In a sense, summarizing is an extended form of checking/clarifying because the summarizer wants confirmation that all concerned have the same understanding of what has been said.

13. Centering/Reinforcement. Helping the other person to recognize his/her strengths, to focus on him/herself and on the qualities that will enable that individual to take problem solving actions.

14. Appreciating. Acknowledging another's strengths and the value of these strengths in the conversation.

15. Judging. Any response that could prompt the other person to call him/herself into further question. Example: "Are you sure that's really the problem? I know your team leader and she doesn't usually lose her temper without good reason."

16. Discounting. Any response that implies the person is making too much of a problem. Example: "It's not all that bad. . ."

17. Ego Speaking. Any response that shifts the focus to you and your experiences instead of the other person's. Example: "I know just what you mean. That guy makes me angry too. Just last week. . ."

18. Being Irrelevant. Any response that ignores the problem usually by changing the subject. Example: "Yeah, well, I sure am glad it's Friday. Sounds like we could all use a weekend right about now."

19. Being Pollyannish. Any response that encourages optimism without offering any grounds for it. Example: "It's tough you lost your leg, but at least you have another. Don't worry. I'm sure it'll all come out for the best."

20. Being Sympathetic. Any response that, though well-meant, offers the other person neither (a) your assistance in stating the problem in solvable terms, nor (b) any concrete suggestions of other avenues to pursue. Example: "I'm so sorry. That's just terrible. You really don't deserve such a rough time."

21. Dumping. Any response that either (a) implies that discussing the problem or doing anything about it might make things worse; or (b) suggests that the problem is already much worse than the person feared. Example: "Man are you in trouble. Once he loses confidence in you, it's all over." or "If you go around saying things like that, you'll really be in trouble."

Part I

Instructions

Five organizational settings are listed below. (Their definitions are listed on page 2.) Refer to these settings as you complete sections A, B, and C of the questionnaire.

Section A

Place a (✓) check in the box which represents the number of times that you have been present in the organizational setting since attending the SPCD Workshop. If you have never been in a particular setting, check (✓) the box "none at all" and go to the next setting. If you have not attended the SPCD course, report the number of times that you have been present in the organizational setting in the last six months.

Section B

Refer to the definitions of communication behaviors and their codes listed on pages 2-3. Enter the codes for up to four behaviors which you can recall using with some frequency for each organizational setting.

Section C

Place a (✓) in the box which represents the extent to which you believe your interpersonal effectiveness has changed since attending the SPCD Workshop... If you have not attended the workshop, place a (✓) check in the box labeled "not applicable."

ORGANIZATIONAL SETTINGS	A Number of meetings attended. (Check one)				B Communication behaviors used by self.	C Your interpersonal effectiveness. (Check one)					
	1 None at all.	2 1-5 times	3 6-10 times	4 11 or more	Enter up to four codes.	1 Increased	2 Remained the same	3 Decreased	4 Uncertain	5 Not applicable	
1) Audit team meeting											columns 13-22
2) Agency meeting											columns 23-32
3) Personal performance and development session.											columns 33-42
4) Staff meeting											columns 43-52
5) Personal problem solving session.											columns 53-62

PART II

Instructions

Place a (✓) check in the box which best represents your feelings regarding each of the questions below. If you have not attended the workshop, place a (✓) check in the boxes labeled "not applicable."

1. To what extent has the SPCD course caused you to be more aware of how you behave when you communicate? /63/

   ☐ Little or none ☐ Some ☐ Moderate ☐ Substantial

   ☐ Very great ☐ Not applicable

2. To what extent has the SPCD course caused you to be more aware of how others behave when you communicate? /64/

   ☐ Little or none ☐ Some ☐ Moderate ☐ Substantial

   ☐ Very great ☐ Not applicable

3. To what extent have you found the material taught in the course to be of benefit to you when you communicate? /65/

   ☐ Little or none ☐ Some ☐ Moderate ☐ Substantial

   ☐ Very great ☐ Not applicable

PART III

Instructions

Consider that each of the statements in Part III has been made to you at the beginning of an interview. Following each statement are a number of alternative responses. Place a (✓) check in the box corresponding to the alternative that demonstrates the greatest degree of respect (i.e., regard, esteem or courtesy) in the situation.

1. "I'm really getting fed up with these blasted reports. It looks like everything has to be done yesterday. Why in hell can't we get a little more notice. That's no way to do a good job. What's so rough is that I can't count on most of my people to understand exactly what's required and not spend a lot of time getting information that nobody is really asking for." /66/

   a. ☐ "I have the same feelings. But that's just the way the government works. Somebody at the top wants some silly information that they won't know what to do with after they get it. Probably they weren't all that interested in the first place. But by the time the request gets down to us, you'd think the future of the country depended on it!"

   b. ☐ "To hell with it. You've got to learn to quit worrying about quality. Quantity! That's what people are interested in. Give them something big and fat and they'll tell you that you did a great job."

   c. ☐ "It's hard to keep interested in doing a good job when you feel you have to fight the whole system to do it."

   d. ☐ "I guess the name of the game is to quit worrying about what's important and what isn't and to do what the boss says."

PART III (continued)

2. "Next month I have to retire. This doesn't make sense. I may be 62, but I work a lot harder than a lot of these younger people around here." (Check one) /67/

   a. ☐ "I've always looked forward to retirement myself. I can't wait to get on that boat of mine."

   b. ☐ "It's tough to know you've still got what it takes to do a good job and the company seems to rule you out because of your age."

   c. ☐ "Good grief! You should feel lucky to still have your health and the chance to do what you want for a change."

   d. ☐ "How does your wife feel about all this?"

   e. ☐ (a) and (b).

3. "I don't think I've ever felt so humilated. The boss' secretary called and told me he wanted to see me in the conference room right away. When I got there, he says, 'Where's the Appleton report?' I said, 'What report?' Nobody told me to prepare a report. But what really hurts is that nobody believed me." (Check one) /68/

   a. ☐ "Maybe you were so upset that it just seemed that way. I can't believe nobody believed you."

   b. ☐ "Sounds like the worst part of it is having your boss feel you can't be trusted."

   c. ☐ "Man you are in trouble. The way that boss of yours works. . . when he begins to lose confidence in you it's all over."

   d. ☐ "Sounds like an organizational problem in dysfunctional communication networks."

   e. ☐ None of the above show respect.

4. "The promotion practices in GAO really stink. If you could make it on merit I sure as the devil would have been on the list today." (Check one) /69/

   a. ☐ "Blaming your failure on the system isn't going to get you anywhere."

   b. ☐ "I know how much you were counting on your promotion, but things have a way of turning out for the best in the long run."

   c. ☐ "I really feel sorry for you, Harry. You and I both know how much you deserved to get promoted. It's really a shame."

   d. ☐ "You feel you have been handed a raw deal and you're really disappointed about it."

   e. ☐ (b) and (c)

5. "I'm really disappointed. I didn't get permission to attend that course on systems management next week. I think I deserve better treatment than that. What's the good of breaking your back to do a good job, if no one is going to help you improve yourself so you can get ahead." (Check one) /70/

   a. ☐ "I'm really sorry. I feel as bad as you do, but what good is that?"

   b. ☐ "It hurts when you miss a chance to improve yourself--especially when you know you've been working so hard to get ahead."

   c. ☐ "They'll surely give you a chance later. Your turn will come later. Just wait and see."

   d. ☐ "How many others from your office received permission to go?"

   e. ☐ "I know lots of people who were turned down for that course, so don't feel so bad."

INTERNAL REVENUE SERVICE

LEVEL II EVALUATION

SUMMARY

On-job evaluation of training at IRS is called "Level II" feedback or external evaluation. It involves collecting course criterion test scores and background information on the trainees and mailing out questionnaires to trainees, supervisors, and/or on-the-job coaches several months after training. Information is collected on the frequency with which tasks are performed, the adequacy of training in preparing participants to perform tasks, and how well the tasks are carried out. The subsequent data is processed, stored, and displayed by means of a computer program, and the results are used to document and improve the relationship between training and job performance.

GENERAL DESCRIPTION OF THE EVALUATION METHOD

Level II feedback is designed for use with technical training courses at IRS. As an example, the Revenue Agent, Unit I (RA) training course evaluation process is referenced in the following review. The basic methodology is the same for all courses, yet aspects of it vary depending on specific characteristics like the student population, training program design, and the statistical analysis required.

RA training was a priority program for evaluation because of the large volume of trainees, ranging from 500 to 2,000 per year, and because RAs are considered among the top professionals at IRS. They must have accounting degrees or the equivalent to be considered for employment, and once employed, they participate in a four-phase training program. This evaluation was geared to unit one of the training program, involving eight weeks of classroom instruction and a subsequent seven weeks of on-the-job training (OJT) requiring application of the tax laws and examination techniques in which they have been instructed.

A prerequisite step in developing the evaluation methodology involves producing the list of job tasks on which the course is based, the subsequent course objectives, and the course criterion test. The relationship between the task, its objective(s), and its representative test items is imperative in order to measure how well the objectives are mastered as compared to how well the task is performed on the job. After this relationship is established, the following steps make up the evaluation process.

Statement of evaluation questions - There are two questions always addressed:

1. Are the students who successfully completed the course able to perform the job tasks for which they were trained?
2. Are the tasks selected for training appropriate to job needs?

Other questions are posed by the person or persons requesting the evaluation, that is, the client. The client may be interested in attitude changes, regional differences, etc., and questions are developed to reflect these interests.

Selection of evaluation instruments - The evaluator decides which instruments are appropriate considering the objectives of the evaluation and the characteristics of the course. Tests, questionnaires, observations, interviews, or surveys may be used. The IRS standard system uses class criterion tests, questionnaires, and a computer data analysis program (using the PLATO instructional computer system). The sources considered for data collection are students, on-job coaches, and/or supervisors.

Selection of sample and preparation of action plan - The evaluator decides how to operationalize the evaluation process. A sample of classes is taken. In RA Unit I, for instance, eight intact classes (25 trainees each) were selected representing different regions of the country, different district sizes, and different recruiting times (taking into account the variables deemed significant by the client).

In RA Unit I, student test data is routinely entered into a computer test program. Test data for the sample was dumped into the Level II computer data analysis program at the termination of the course. Students and on-the-job coaches were notified of the nature of their future input at this time. Anonymity of trainees' scores and responses was thus assured.

A questionnaire measuring job performance was mailed out at the end of on-the-job training, to each trainee and his/her on-the-job coach. (Note: For most training courses, it is best to mail the questionnaire to each trainee and supervisor three to six months after course completion. However, RA Unit I is followed by seven weeks of OJT and then another seven week course, RA Unit II. As a result, the best job performance data for RA I is obtained at the end of OJT.)

Design of instruments - The evaluator designs or adapts the instruments selected and pre-tests them. For instance, RA training employs criterion referenced tests and, for the Level II evaluation, a questionnaire mailed several months after the completion of training. With criterion referenced tests, instructors evaluate trainees on how they perform in reference to each course objective. The questionnaire was used to accumulate background data, task ratings, and general responses. (See Attachment for questionnaire instructions and content.) The background data in the questionnaire allowed for multiple-choice responses to items mainly inquiring into academic and professional backgrounds of trainees.

The task rating scale involved the evaluation by the trainees and on-job instructor of each task performed on the job after the termination of

course. Each task was rated on three dimensions: frequency, training adequacy, and task performance. In reference to how frequently a task is performed on the job, the evaluator could see if training was relevant to what the trainees actually do at work. For example, in RA Unit I evaluation, the task requiring trainees to locate and cite revenue rulings and court cases was rated as: a) never performed, b) performed for one or two cases, c) performed for about half of the cases, d) performed for most of the cases, or e) performed for all of the cases.

The second task rating involved the adequacy of training as input for future training course offerings. Using the same task as an example, trainees and on-the-job coaches rated whether: a) the task requires much more emphasis in training, b) training less than adequate, increase emphasis, c) training adequate for task, d) training more than adequate, decrease emphasis, or e) greatly reduce or eliminate training for task.

The last task rating involved how well the task was performed on the job after training. Again in reference to the task requiring trainees to locate and cite revenue rulings and court cases, trainees and on-the-job coaches checked: a) could not perform task, b) substantial errors in performance, c) few errors in performance, d) satisfactory performance, or e) superior performance. The analyses of these task ratings were a large part of Level II feedback.

The general question section was reserved for any additional questions not addressed in the task ratings, e.g., "Were there any job tasks not trained which should have been?"

Collection of course criterion test results - Subjects' test scores were collected by their ID numbers from the computer program and a mailing list for the distribution of the questionnaire was created.

Administration of instruments - The evaluator administers the instruments by means of a mailing or by other means appropriate to the circumstances. If mailed, the instruments are returned in an enclosed self-addressed mailing envelope.

Analysis and interpretation of data - All responses to the Level II questionnaire were used as input to the computer data analysis program. The evaluator examined the data produced for information to improve the course. The background information came into play as a population selector. All responses can be analyzed through groupings of the background data, and various reports are generated in terms of each category of trainee: college graduate, non-college graduate, number of years of job experience, GS rating, region, etc. Reports of individual groups, combination of groups, and the total population can include:

1. Means and standard deviations of all task ratings (frequency, training adequacy, and job performance).
2. Frequency and percentages of all task ratings.
3. Course criterion test scores by class.
4. Performance by objective, that is, the percentage of trainees who mastered specific objectives.
5. The relationship of performance on the criterion test to task ratings, thereby showing how the mastery or non-mastery of an objective relates

to job performance on that same task. An example follows:

Objective			Task Frequency		Task Training Adequacy		Task Performance	
Obj	Met?	N	Mean	SD	Mean	SD	Mean	SD
001	Yes	24	2.50	0.82	3.00	0.65	3.00	0.86
	No	0						
002	Yes	20	3.00	0.82	3.65	0.87	3.50	0.65
	No	4	3.10	1.00	3.02	1.00	3.00	1.00

In objective 002, those who passed the training objective also did better in performing the task on-the-job. This report can indicate which objectives are crucial to be mastered in the training, in order to assure satisfactory job performance.

6. The analysis of the general questions permitting quantifiable responses by frequencies, percentages, means, and standard deviations.
7. Correlations of any two items, e.g., the relationship between grade level and task performance.

In the past, the questionnaire responses from trainees and from supervisors or OJT coaches have highly correlated. If a difference does appear, the trainees' answers on task frequency and training adequacy are given more weight, as they have the most direct knowledge about what is occurring and the relationship of training to the performance of job tasks. The supervisors' answers on the quality of task performance are given more weight, as they can

make a more experienced judgment on how well the tasks are being done.

Preparation of the final report - For Level II efforts, an evaluation report is prepared, including a summary, background information, a description of the study, results and conclusions, and recommendations. Results are primarily used for course revision. In addition, the evaluator can use the data to compare different instructional methodologies (e.g., traditional classroom vis a vis computer based training approaches), by looking at the Level II results for participants from each group. Using the background data from Level II questionnaires, the organization can also track progress of entry-level professionals to determine what types of individuals stay with the organization and the levels of performance they achieve.

ANALYSIS OF EVALUATION METHOD

Conditions for use

- List of tasks.
- Course objectives stated in behavioral terms and related to the job tasks.
- Standard questionnaires and inventories.
- Computer program (IRS uses a program designed for the PLATO system; however, other computer programs can perform similar operations).
- Organizational climate which supports (expects) thorough evaluation efforts.

Resources required

Staff time is required to acquire data through the questionnaire, to input it into the computer program, and to interpret it. The design of the questionnaire, the interpretation of the data, and the final report are probably the most time-consuming phases and should be performed by someone familiar with the program and with the analysis of non-complicated statistical data. Step-by-step guidelines for developing, conducting, and reporting the evaluation are being prepared during 1983 for IRS program managers.

The input phase involves typing parameters of the specific course being evaluated into the computer data analysis system (number of objectives, number of trainees, etc.) and likewise the parameters of the questionnaire (number of background questions, number of alternatives for each, number of tasks, etc.). The completed computer score sheets (used for questionnaire responses) are then run through an optical scanner.

The trainees' and supervisors' efforts to fill out questionnaires several months after course completion usually take about thirty-five to forty-five minutes per questionnaire.

Nature of information produced

The information provided by the data analysis reveals how the course affected job performance and whether the tasks trained were needed for the job. The course developers or trainers can use the information to revise the instructional objectives and the design of the course. The reason the analysis is so effective goes back to the basic organization of the course. The course objectives are derived from the job tasks, and test items on the final exam measure achievement of the objectives. The final report of the information can also be used on the job by supervisors and coaches to assist employees with their further development.

The population selector aspect of this methodology is important. For example, in a total group report, a task may show a low performance rating; however, separate group reports created for trainees based on background variables such as experience, grade level, or location may indicate that a particular group is having problems in performance rather than the entire population of trainees. This will help individualize training for specific populations.

Advantages

- The panoply of information which can be retrieved from background data input (such as regional and educational differences); from self-perceptions of job performance, supervisor's perceptions, and their comparisons; from the relationship between test performance and task ratings within various populations; etc.

- Quantifiable rather than anecdotal data.
- The different ways the data can be analyzed using the PLATO program.
- The ease with which decisions can be made.
- Cost-effectiveness of mail-out questionnaires and proven reliability of data.
- Anonymity of subjects and emphasis on group performance rather than individual performance, making the evaluation less threatening to trainees and unions.

Limitations

- Course must be based on job tasks and must have criterion tests.
- Former trainees must have the opportunity to perform the tasks on the job within a few months after training.
- Requires questionnaire response time from the trainees and the supervisors, which can be long if the tasks are numerous.
- Amount of data generated requires computer processing, particularly if the sample is large.

Reference

Marjorie Kupper
Program Manager for Evaluation
Methods, Media, and Services Branch
Training and Development Division
Internal Revenue Service
2221 Jefferson Davis Highway
Crystal City, VA 22202
(Phone: (703) 557-2456)

ATTACHMENT

EVALUATION OF REVENUE AGENT UNIT I

CLASSROOM TRAINING

Evaluation of Revenue Agent Unit I Classroom Training

--Directions for Trainees--

Your Revenue Agent Unit I class has been selected as part of a special evaluation study to be conducted by the national office. The study is designed to measure the effectiveness of the training and to find ways to improve the training. It will not be used to measure the individual trainee in any way. Several classes from several regions are involved in the study, and all results will be expressed as group averages and correlations.

The specific purposes of this type of evaluation are 1) to determine if trainees can perform the job after completing the classroom training, and 2) to see if the right tasks were trained for the job. To accomplish these objectives , we must obtain data regarding the trainee during classroom training and at the completion of OJT. We have already received your classroom data; the enclosed questionnaire will provide us with all information needed at the end of OJT.

Please fill out the enclosed questionnaire using the optical scanning Score Sheets for your responses. There are 2 sections to the questionnaire. The first section requires one score sheet; the second section requires 2 score sheets.

Each section has its own directions. Please read them carefully. The first section asks questions regarding your background. The second section presents the tasks you learned in classroom training, and asks you to rate them according to the frequency you now perform them, how well you feel you were trained for them, and how well you initially performed them in OJT. This section also presents tasks you performed in OJT in association with your cases, and asks you to rate how well you performed them.

Please be candid with your responses. This questionnaire can only be effective in improving the course if we receive honest answers. Your social security number is required on the score sheets so we can track your classroom data to this OJT questionnaire. After the computer matches the 2 sets of data, all individual numbers and reports will be inaccessible. Our purpose, as stated earlier, is to measure training effectiveness, not the individual trainee.

It is equally important to the study that we get 100% response from all trainees. Please return all 3 score sheets and the last page of the third section (requiring a written response) in the envelope provided by Feb 2. Your on-the-job instructor is being asked to fill out a similar questionnaire for each trainee so we will have 2 sources of information.

SECTION A. BACKGROUND DATA

Fill in the blanks in the following manner:

Name: Evaluation of RA I Training
Course: Background Data Date _____
Test Code: ___ Training Site _____

Part 1 (upper left corner) Write your identification number (social security number) in the first section of the score sheet. Write the number in the manner shown by the example on the score sheet.

INSTRUCTIONS:

The questions in this section are multiple choice. Record all your answers on the score sheet. Give only one response for each question. If more than one response seems appropriate, pick the one that best describes your answer, e.g. the area where your major amount of work experience is, etc. As you answer, check to make sure that the question numbers correspond to the numbers on the score sheet. PLEASE ANSWER EVERY QUESTION.

1. Are you completing this questionnaire as:

   a. trainee
   b. On-the-job instructor

2. How was your training conducted?:

   a. Prototype class: self-instruction with computer-based training followed by traditional classroom presentations.
   b. All traditional classroom presentations.

3. Do you have a 4-year college degree?

   a. Yes
   b. No

4. How long has it been since you received the 4-year college degree?

   a. Not applicable
   b. less than 6 months
   c. between 6 months and 1 year
   d. between 1 and 3 years
   e. More than 3 years

5. Identify your college degree major.

   a. Not applicable
   b. Business administration (including accounting)
   c. Liberal Arts
   d. Sciences
   e. Pre-law
   a & e. Other

6. How many credit hours of "pure" accounting do you have? ("Pure" accounting would include introductory, intermediate, advanced, cost, auditing, etc. It would not include finance, accounting for managers, business law, tax law, or any course that does not focus on accounting procedures.)

   a. less than 12 hours
   b. 12 - 17 hours
   c. 18 - 24 hours
   d. over 24 hours

7. Where did you get the majority of your accounting credits?

   a. four-year college
   b. junior college
   c. business school
   d. other

8. How many credit-hours of tax law do you have?

   a. None
   b. 1 - 3 hours
   c. 4 - 6 hours
   d. more than 6 hours

9. Do you hold a professional license??

   a. No
   b. C.P.A.
   c. member of the bar
   d. other

10. Identify previous work experience in accounting.

   a. None
   b. government (federal, state or local)
   c. public accounting
   d. private industry
   e. other

11. How many years of previous work experience in accounting do you have?

   a. None
   b. less than 1 year
   c. 1-3 years
   d. 4-6 years
   e. 7 or more years

12. Identify the nature of your previous work experience in IRS.

   a. No previous IRS experience
   b. Tax Auditor (completed TA I and TA II courses)
   c. Tax Auditor (completed TA III course)
   d. Taxpayer Service Representative or Specialist
   e. Revenue Officer
   a & e. Accounting Aid
   b & e. Co-op student
   c & e. Other

13. How was your job interview conducted?

   a. telephone interview outside your own district
   b. telephone interview within your own district
   c. office interview outside your own district
   d. office interview within your own district

14. I had an accurate view of what the profession would require of me when I was hired.

a. Strongly disagree
b. Disagree
c. Uncertain
d. Agree
e. Strongly agree

(Excerpts)

SECTION B: TASK RATINGS

Fill in the blanks in the following manner:

Name: Evaluation of RA I Training
Course: Task Ratings Date _____
Test Code: Task Training Site _____

Part 1
(Page 1 upper left corner) Write your identification number (social security number) in part 1 on the first score sheet. Write the number in the manner shown by the example on the score sheet. Do the same on the second score sheet in part 3.

Part 3
(Page 2, upper left corner)

INSTRUCTIONS

The tasks listed on the following pages are the ones that were used to design Revenue Agent Unit I classroom Training. Rate the tasks now according to your experience in on-the-job training. Rate each task according to three different characteristics.

FREQUENCY - How often did you perform the task?
ADEQUACY OF TRAINING - How well did the classroom training alone prepare you for the task?
JOB PERFORMANCE - How well did you initially perform the task?

Record your ratings on the score sheet with only one response for each characteristic under a task. As you record your ratings, check to make sure the numbers beside each task correspond to the numbers on the score sheet. The Questionnaire and the score sheet correspond to each other by number as shown below with number 1.

QUESTIONNAIRE

Task	Frequency	Adequacy	Performance
A.	(1)	2.	3.
B.	4.	5.	6.
C.	7.	8.	9.
D.	10.	11.	12.

SCORESHEET

(1)
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

RECORD ALL ANSWERS ON COMPUTER SCORESHEET	FREQUENCY a. Never Performed b. Performed for 1 or 2 cases c. Performed for about ½ of cases d. Performed for most of cases e. Performed for all cases	TRAINING ADEQUACY a. Task requires much more emphasis in training b. Training less than adequate; increase emphasis c. Training adequate for task d. Training more than adequate; decrease emphasis e. Greatly reduce or eliminate training for task	TASK PERFORMANCE a. Could not perform task b. Substantial errors in performance c. Few errors in performance d. Satisfactory performance e. Superior performance (do not answer if task has never been performed)
TASK			
A. Locate and cite Code and Regulation sections.	1. a b c d e	2. a b c d e	3. a b c d e
B. Locate and cite Revenue Rulings and court cases.	4. a b c d e	5. a b c d e	6. a b c d e
C. Determine the taxpayer's correct tax liability using the tax tables or tax rate schedules, whichever is applicable.	7. a b c d e	8. a b c d e	9. a b c d e
D. Compute the prepayment credits for Earned Income and/or Excess FICA.	10. a b c d e	11. a b c d e	12. a b c d e
E. Determine the correct deduction for personal exemptions.	13. a b c d e	14. a b c d e	15. a b c d e
F. Determine the correct filing status for individual income tax returns.	16. a b c d e	17. a b c d e	18. a b c d e
G. Identify items of gross income, and recognize certain statutory exclusions from gross income, such as gifts, inheritance, prizes, scholarships or fellowships, life insurance proceeds and interest on State and municipal obligations.	19. a b c d e	20. a b c d e	21. a b c d e
H Determine whether an expense is deductible in the conduct of a trade or business, and distinguish between capital expenditures and operating expenses.	22. a b c d e	23. a b c d e	24. a b c d e
I Determine the deductibility of travel and transportation expense.	25. a b c d e	26. a b c d e	27. a b c d e
J Determine the deductibility of entertainment and business gift expenses, including entertainment facility expenditures	28. a b c d e	29. a b c d e	30. a b c d e

RECORD ALL ANSWERS ON COMPUTER SCORESHEET	FREQUENCY a. Never Performed b. Performed for 1 or 2 cases c. Performed for about ½ of cases d. Performed for most of cases e. Performed for all cases	TRAINING ADEQUACY a. Task requires much more emphasis in training b. Training less than adequate; increase emphasis c. Training adequate for task d. Training more than adequate; decrease emphasis e. Greatly reduce or eliminate training for task	TASK PERFORMANCE a. Could not perform task b. Substantial errors in performance c. Few errors in performance d. Satisfactory performance e. Superior performance (do not answer if task has never been performed)
TASKS			
FF. Compute the investment credit carryback and recapture.	94. a b c d e	95. a b c d e	96. a b c d e
GG. Compute the taxable portion of an annuity	97. a b c d e	98. a b c d e	99. a b c d e
HH. Determine the exclusions from income allowable under Code (meals and lodging, or rental allowance furnished to a minister, insurance premium paid by employer, death benefit, damages, workman's compensation, benefits from accident and health insurance, disability income).	100. a b c d e	101. a b c d e	102. a b c d e
II. Determine if a loss is deductible, and compute the allowable casualty loss deduction.	103. a b c d e	104. a b c d e	105. a b c d e
JJ. Determine the deductibility of expenses in connection with business use of a home and rental of vacation homes.	106. a b c d e	107. a b c d e	108. a b c d e
KK. Distinguish between a business and a non-business bad debt, and determine the amount allowable as a bad debt deduction using the specific charge-off and reserve methods.	109. a b c d e	110. a b c d e	111. a b c d e
LL. Compute minimum tax and the alternative minimum tax.	112. a b c d e	113. a b c d e	114. a b c d e
MM. Compute maximum tax	115. a b c d e	116. a b c d e	117. a b c d e
NN. Determine whether an individual qualifies for income averaging and compute tax using schedule G	118. a b c d e	119. a b c d e	120. a b c d e
OO. Apply the rules for additions to tax by computing civil penalties which may be imposed and the amount of interest due.	121. a b c d e	122. a b c d e	123. a b c d e

GENERAL QUESTIONS

Questions 124 through 129 REPRESENT TASKS PERFORMED FOR ASSIGNED CASES IN ON-THE-JOB TRAINING. RATE EACH TASK ACCORDING TO YOUR OPINION OF YOUR GENERAL LEVEL OF PERFORMANCE USING THE FOLLOWING SCALE:

a. could not perform task
b. substantial errors in performance
c. few errors in performance
d. fully satisfactory performance
e. superior performance

---

124. Complete and assemble all case file forms correctly.

125. Conduct initial interview in a professional and courteous manner, conveying and obtaining all necessary information and explanations.

126. Develop case with approved pre-examination plan, a logical sequence of audit steps, and significant issues identified and researched.

127. Complete workpapers clearly and concisely, showing facts adequately developed and documented, and conclusions with authority cited.

128. Prepare Report Form 4549 properly with correct entries and computations and all necessary attachments.

129. Conduct closing conference in a professional and courteous manner, explaining all findings and proposed adjustments, informing taxpayer of his rights, and considering the taxpayer's point of view.

130. How did the classroom training as a whole prepare you for the job?

a. not at all
b. very little
c. adequately
d. very well

131. Are there tasks in the revenue agent job that <u>should</u>, have been trained in the classroom, but weren't?

a. yes
b. no

Please use the rest of this page to explain what tasks, if any, you feel are not trained but should be.

THANK YOU FOR COMPLETING THE QUESTIONNAIRE. PLEASE PUT ALL THE COMPUTER SCORE SHEETS AND THIS PAGE INTO THE ENVELOPE PROVIDED, AND MAIL IMMEDIATELY.

Evaluation of Revenue Agent Unit I Classroom Training

—Directions for OJT Coaches—

The trainees you are coaching in OJT are part of a Revenue Agent Unit I class selected for a special evaluation study conducted by the national office. The study is designed to measure the effectiveness of the training and to find ways to improve the training. It will not be used to measure the individual trainee in any way. Several classes from several regions are involved in the study, and all results will be expressed as group averages and correlations.

The specific purposes of this type of evaluation are 1) to determine if trainees can perform the job after completing the classroom training, and 2) to see if the right tasks were trained for the job. To accomplish these objectives, we must obtain data regarding the trainee during classroom training and at the completion of OJT. We have already received classroom data; the enclosed questionnaire will provide us with all information needed at the end of OJT.

Please fill out the enclosed questionnaire using the Optical Scanning Score Sheets for your responses. Fill out a separate questionnaire for each trainee. There are 2 sections to the questionnaire. The first section requires one score sheet; the second section requires 2 score sheets.

Each section has its own directions. Please read them carefully. The first section asks questions regarding assessment of the trainee. The second section presents the tasks learned in classroom training, and asks you to rate them according to the frequency they are performed, how well you feel the trainee was trained for them, and how well you feel the trainee initially performed them in OJT. This section also presents tasks the trainee performed in OJT in association with his/her cases, and asks you to rate how well the trainee performed them.

Please be candid with your responses. This questionnaire can only be effective in improving the course if we receive honest answers. The trainee's social security number is required on the score sheets so we can track classroom data to this OJT questionnaire. After the computer matches the 2 sets of data, all individual numbers and reports will be inaccessible. Our purpose, as stated earlier, is to measure training effectiveness, not the individual trainee.

It is equally important to the study that we get 100% response from all coaches. Please return all 3 score sheets and the last page of the third section (requiring a written response) in the envelope provided by Feb. 2. Do this for each trainee you evaluate. The trainee is being asked to fill out a similar questionnaire for himself/herself so we will have 2 sources of information. Thank you for your time in completing this study.

SECTION A. BACKGROUND DATA

Fill in the blanks in the following manner:

Name: Evaluation of RA I Training
Course: Background Data Date _____
Test Code: ____ Training Site _____

Part 1 (upper left corner) Write the trainee's identification number (social security number) in the first section of the score sheet. Write the number in the manner shown by the example on the score sheet.

1. Are you completing this questionnaire as:

a. trainee
b. on-the-job-instructor

NOW GO TO QUESTION 15 ON YOUR SCORE SHEET AND ANSWER THE FOLLOWING:

15. Rate the trainee based on his/her on-the-job performance

a. Unacceptable
b. performance does not meet in every respect the fully acceptable level described for c.
c. fully acceptable
d. achieves and in some respects exceeds the fully acceptable level described for c.
e. exceeds acceptable standards.

16. Identify the trainee's score in Revenue Agent Unit I Classroom training (percent of objectives mastered)

a. less than 70%
b. 70 - 80%
c. 81 - 90%
d. greater than 90%

17. Please give the training recommendation provided by the classroom instructor (form 5412) for the trainee.

a. Degree of supervision - maximum
b. Degree of supervision - average
c. Degree of supervision - minimum

(Excerpts)

SECTION B: TASK RATINGS

Fill in the blanks in the following manner:

Name: Evaluation of RA I Training
Course: Task Ratings Date _____
Test Code: ____ Training Site _____

Part 1 (Page 1 upper left corner)	Write trainee's identification number (social security number) in part 1 on the first score sheet. Write the number in the manner shown by the example on the score sheet. Do the same on the second score sheet in part 3.
Part 3 (Page 2, upper left corner)	

INSTRUCTIONS

The tasks listed on the following pages are the ones that were used to design Revenue Agent Unit I classroom Training. Rate the tasks according to the trainee's performance in on-the- job training. Rate each task according to three different characteristics.

FREQUENCY - How often did the trainee perform the task?
ADEQUACY OF TRAINING - How well did the classroom training alone prepare the trainee for the task?
JOB PERFORMANCE - How well did the trainee initially perform the task?

Record your ratings on the score sheet with only one response for each characteristic under a task. As you record your ratings, check to make sure the numbers under each task correspond to the numbers on the score sheet. The questionnaire and the scoresheet correspond to each other by number as shown below with number 1.

QUESTIONNAIRE

Task	Frequency	Adequacy	Performance
A.	1.	2.	3.
B.	4.	5.	6.
C.	7.	8.	9.
D.	10.	11.	12.

SCORESHEET

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

RECORD ALL ANSWERS ON COMPUTER SCORESHEET

FREQUENCY

a. Never Performed
b. Performed for 1 or 2 cases
c. Performed for about ½ of cases
d. Performed for most of cases
e. Performed for all cases

TRAINING ADEQUACY

a. Task requires much more emphasis in training
b. Training less than adequate; increase emphasis
c. Training adequate for task
d. Training more than adequate; decrease emphasis
e. Greatly reduce or eliminate training for task

TASK PERFORMANCE

a. Could not perform task
b. Substantial errors in performance
c. Few errors in performance
d. Satisfactory performance
e. Superior performance

(do not answer if task has never been performed)

TASK			
A. Locate and cite Code and Regulation sections.	1. a b c d e	2. a b c d e	3. a b c d e
B. Locate and cite Revenue Rulings and court cases.	4. a b c d e	5. a b c d e	6. a b c d e
C. Determine the taxpayer's correct tax liability using the tax tables or tax rate schedules, whichever is applicable.	7. a b c d e	8. a b c d e.	9. a b c d e
D. Compute the prepayment credits for Earned Income and/or Excess FICA.	10. a b c d e	11. a b c d e	12. a b c d e
E. Determine the correct deduction for personal exemptions.	13. a b c d e	14. a b c d e	15. a b c d e
F. Determine the correct filing status for individual income tax returns.	16. a b c d e	17. a b c d e	18. a b c d e
G. Identify items of gross income, and recognize certain statutory exclusions from gross income, such as gifts, inheritance, prizes, scholarships or fellowships, life insurance proceeds and interest on State and municipal obligations	19. a b c d e	20. a b c d e	21. a b c d e
H Determine whether an expense is deductible in the conduct of a trade or business, and distinguish between capital expenditures and operating expenses.	22. a b c d e	23. a b c d e	24. a b c d e
I Determine the deductibility of travel and transportation expense.	25. a b c d e	26. a b c d e	27. a b c d e
J Determine the deductibility of entertainment and business gift expenses, including entertainment facility expenditures	28. a b c d e	29. a b c d e	30. a b c d e

82

GENERAL QUESTIONS

Questions 124 through 129 REPRESENT TASKS PERFORMED FOR ASSIGNED CASES IN ON-THE-JOB TRAINING. RATE EACH TASK ACCORDING TO THE GENERAL PERFORMANCE LEVEL OF THE TRAINEE USING THE FOLLOWING SCALE:

a. could not perform task
b. substantial errors in performance
c. few errors in performance
d. fully satisfactory performance
e. superior performance

---

124. Complete and assemble all case file forms correctly.

125. Conduct initial interview in a professional and courteous manner, conveying and obtaining all necessary information and explanations.

126. Develop case with approved pre-examination plan, a logical sequence of audit steps, and significant issues identified and researched.

127. Complete workpapers clearly and concisely, showing facts adequately developed and documented, and conclusions with authority cited.

128. Prepare Report Form 4549 properly with correct entries and computations and all necessary attachments.

129. Conduct closing conference in a professional and courteous manner, explaining all findings and proposed adjustments, informing taxpayer of his rights, and considering the taxpayer's point of view.

130. How did the classroom training as a whole prepare the trainee for the job?

a. not at all
b. very little
c. adequately
d. very well

131. Are there tasks in the revenue agent job that <u>should</u>, have been trained in the classroom, but weren't?

a. yes
b. no

Please use the rest of this page to explain what tasks, if any, you feel are not trained but should be.

THANK YOU FOR COMPLETING THE QUESTIONNAIRE. PLEASE PUT ALL THE COMPUTER SCORE SHEETS AND THIS PAGE INTO THE ENVELOPE PROVIDED, AND MAIL IMMEDIATELY.

EVALUATION METHODS AT THE EMPLOYMENT STANDARDS ADMINISTRATION OF THE DEPARTMENT OF LABOR

The Branch of Training and Development at the Employment Standards Administration (ESA) is concerned with assessing both the participants' use of newly acquired skills (individual performance), and the impact of using new skills on organizational performance. The two descriptions which follow represent each of these focuses, and are typical of evaluations carried out at ESA. The first method presented addresses evaluation of technical personnel such as investigators and claims examiners, and the second looks at office managers. The methodological approaches are adapted within ESA for each evaluation performed, to produce the specific information needed

The evaluation described in Part I was designed by ESA staff member Margaret Hemsley. The evaluation described in Part II was implemented by Gloria Pearlstein.

EMPLOYMENT STANDARDS ADMINISTRATION

PART I

EVALUATION OF DESK AUDIT TRAINING

SUMMARY

Evaluation of the training of agents such as investigators and claims examiners involved needs analysis of trainees' skills, a task analysis, development of course objectives based on the skill levels and job task requirements, an in-course evaluation, and a supervisory on-job performance evaluation four to six months after the completion of the course. For the in-course evaluation, comparisons of skill-level achievement were made among groups of trainees with different levels of experience prior to training. For the follow-up evaluation, comparisons were made between group needs before the course and supervisory ratings of post-course performance. The final report provided a summary of the results, a data display, and a synopsis of the methodology.

GENERAL DESCRIPTION OF THE EVALUATION METHOD

Courses for investigators and claims examiners are evaluated in terms of their impact on the job performance of individuals. The Employment Standards Administration (ESA) offers several courses for these personnel; the one referenced in this review is the Desk Audit Skills Course (DASC). Other courses are evaluated in a similar manner with some variations.
Equal Opportunity Specialists (EOS) conduct desk audits of affirmative action plans of those private industries which are contractors to the Federal government. (Two examples of contractors are utility companies and paper companies.) When the contract exceeds a certain dollar amount or the number of employees used in the contract exceeds a given number, then the contractor must abide by the requirements of Executive Order No. 11246. In doing so, a contractor submits an Equal Employment Opportunity (EEO) Report, which may be selected for review for various reasons. When selected, the contractor is requested to submit an Affirmative Action Plan. During a desk audit, an EOS reviews this plan to identify areas where the contractor may not be in compliance with the Executive Order. The desk audit may be followed by an on-site review, in which the problems indicated in the desk audit are investigated.

Clearly EOSs who conduct desk audits must be well-heeled in knowledge of Government regulations pertaining to Affirmative Action. To qualify for the DASC they must already have had an introductory course in contract compliance and worked on the job in a trainee position for three to twelve months in the supply and service area. Those in this area work directly or indirectly with the conditions private industry must meet when they supply goods or services

to the Government.

The Desk Audit Skills Course was developed in response to a newly consolidated workforce drawn from eleven different Federal agencies. The new group needed to be able to follow a uniform set of procedures in conducting their reviews and investigations. A needs analysis produced a number of proposals for training, of which the Desk Audit Skills Course was the most basic. The course itself is nine days long and extends over a period of two weeks. Over a ten-month period, about 40 offerings of the course were provided, with 15-20 participants per class.

The evaluation of this course involved the following process.

Identification of job competencies - The skills necessary to conduct a desk audit were listed in detail. This analysis was conducted through interviewing a small sample of incumbents, using a structured format.

Needs analysis - A sample of prospective candidates for the DASC were asked detailed questions about their skills using highly structured interviews. The purpose was to determine if the individuals already possessed the skills required to perform the job. The interviews were conducted by phone or by questionnaire. Some questions required a yes/no response, and others required explanations. Three examples are presented below:

- Can you identify technical deficiencies in a Work Force Analysis? (yes/no)
- Can you identify when a contractor's goals are realistic? (yes/no)

- What is the difference between systemic discrimination and affected classes? (detailed response)

Employees were assured confidentiality and asked to be as candid as possible in describing their skills. If enough people already knew how to do specific things, those tasks were eliminated as areas for eventual translation into course objectives. (See Attachment 1 for survey introduction and additional sample questions and recording format.)

Task analysis - Expert practitioners were selected for an intensive two-week session of in-depth task analysis. These individuals were considered by their peers and supervisors as high performers in their jobs. The tasks analyzed were those derived from steps one and two - skills needed for competent performance and which were lacking in the population under consideration. Individuals were asked for detailed explanations of how the job is carried out, in terms, for instance, of what is particularly important among all the tasks, and which tasks are more difficult than others.

Statement of objectives - Course objectives were formulated using the information provided by the task analysis. Then a second survey was conducted with a sample of Equal Employment Specialists representing the eleven different agencies, to identify who possessed which skills and how frequently they practiced the skills. Thus the course was designed to provide skills which were needed to perform the work, and which were not possessed by the prospective participants. Based on results from the representative sample, conclusions were drawn and generalized to the entire population relating nature and extent of experience, and need for course.

In-course evaluation - Two types of evaluation techniques were used within each Desk Audit Course. One was a "pre-test" and "post-test," which were actually questionnaires in which EOSs were asked to indicate how confident they were about their ability to perform specific tasks required to complete a desk audit (see Attachment 2). The second type of evaluation technique was the use of an "Assessment Case" - a fictional Affirmative Action Plan simulating a typical situation the EOS encounters on regular desk audits. The exercise took most of a day to complete and was the most direct measure of the performance level achieved by each EOS at the end of the course.

While the course was designed for EOSs with three to twelve months of experience in conducting desk audits, most classes had some participants with no experience and others with several years of experience. Thus the evaluator analyzed the results of the two types of in-course exercises not only for the classes as a whole, but also by category of experience. The primary question to be answered was, Did the three - twelve month group achieve the level of performance sought? Two corollary questions were, Did the course enable those with little or no experience to conduct a desk audit satisfactorily? and Was the course of any benefit to those with more than a year of experience? By analyzing the data for each sub-group, the evaluator was able to draw conclusions about course effectiveness and participant population. The results confirmed that more experienced EOSs should not take the course, and that newly-hired EOSs should gain some experience before being trained.

Follow-up evaluation - Although the original course structure called for two trainers per session, resource constraints resulted in some of the courses being taught by only one instructor. Because the follow-up evaluation was

originally designed, however, to assess two-trainer sessions, the sample of participants selected for inclusion in this evaluation was chosen only from those sessions. The sample was further narrowed by selecting two-trainer sessions that were timely relative to the evaluation effort, and selecting students in those sessions who met the criterion of three to twelve months experience (some classes contained more experienced individuals).
The final sample consisted of twelve participants from two classes. While a ten percent sample size would have been preferable (and appropriate, given the large number of employees taking the course), the evaluators chose to work with individuals for whom the course was originally intended, and with courses of the original design.

A survey questionnaire for supervisory evaluation of trainees was based on thirteen aspects of EOS work during a desk audit. These work areas were reflected in the objectives and taught in the course. There was indication in the needs analysis that most trainees did not have these requisite skills, which support their inclusion in the supervisory evaluation questionnaire. There were five numerical ratings of each task. An example follows:

Item: EOS determines current employment patterns of protected group members.

1	2	3	4	5	0
Unacceptable	Marginal	Adequate	Good	Thorough	Have Not Observed

Supervisors of the former trainees in the sample completed the questionnaires four to six months after the termination of the course. This time period was chosen because of the life cycle of reviews and investigations (60 days) and the need to obtain enough samples of work for accurate judgments to be made. The evaluator let the supervisors know ahead of time that the survey would be mailed to them. With organizational support for such surveys, the questionnaire return rate was high.

It should be noted that a pilot survey was conducted to test the questionnaire; because the results of the survey showed no need to revise the questionnaire, the pilot group was included in the final results.

Responses were collected and the average supervisor response to each item was calculated. Evaluation conclusions were drawn by comparing group needs before the course to group averages from supervisory ratings after the course. Group comparisons could be used because the course was based on the results of a needs analysis of prospective participants, and because the sample used for the evaluation met the course design criterion of three to twelve months' experience on the job before course attendance.

For both the in-course evaluation and the follow-up, a final report was produced, describing the purpose, process, data analyses, and results and recommendations. The evaluation results were provided to management and were used to verify adequacy of course design and content and appropriateness of participant population.

ANALYSIS OF EVALUATION METHOD

Conditions for use

- Top management support for conducting evaluation efforts, including surveying outside the course environment.
- Training office requirement that a portion of staff time be devoted to building in evaluation as part of the course design (including obtaining outside resources if needed).
- Ability of training function to work with client, to develop an understanding of the nature of the job and the level of performance expected, and to gain cooperation for the evaluation. "Ability" includes both skill and credibility.
- Front-end analyses, to develop information on skills needed to do the job, skills actually possessed by potential participants, and detailed descriptions of skills for which training is appropriate; needed as basis for course design and evaluation design.

Resources required

The main resource needed is the trainer's expertise in developing needs analysis and task analysis processes, and designing the course based on the resulting information. Also needed is some ability in designing the evaluation process, including questionnaire development and sample selection. Experts outside the training office can be used as advisors to the evaluator. The follow-up questionnaire flows from the pre-course efforts. Other resources involve the time of those supporting the course planning (e.g., the practitioners participating in the task analysis), and those filling out the follow-up questionnaire (the supervisors).

The selection of a sample population instead of all trainees taking the course cuts down considerably on the data collection and analysis.

Nature of information produced

Averages of raw data were taken from ratings of the in-course and follow-up questionnaires. Average scores from the simulation exercise at the end of the course were derived. The evaluator determined if performance was occurring to a level satisfactory to the supervisors of the participants. Because the course objectives are based on a task analysis of the job, if results from any of the assessment devices point to less than acceptable performance, the evaluator can examine the relevant portions of the course to determine what changes should be made.

Advantages

- Course content based on a needs analysis which indicates the trainees' strengths and weaknesses, and a task analysis which ties course objectives to job tasks.
- Confidentiality assured, which encourages honest responses.
- The use of a sample population which considerably decreases the amount of resources required.
- Ability to pinpoint the specific portions of the course which may need changing, based on evaluation findings.

Limitations

- In this case, resource and administrative constraints, which produced a small sample size for the follow-up, and which limited generalization of conclusions.

- The time needed for the course design and development (six months in this case), and the time period needed between the end of the course and the follow-up (four to six months). Without administrative delays and with a simpler situation, a shorter time period could be expected.
- In this case, the link was not made between end-of-course learning and post-course performance improvement on an individual basis; this comparison could be made within the design as described above.

Reference

Brendan Branley, Chief
Branch of Training and Development
Employment Standards Administration
Room S3013C
Department of Labor
200 Constitution Avenue, NW
Washington, DC 20210
(Phone: (202) 523-7036)

ATTACHMENT 1

SURVEY INTRODUCTION

SAMPLE QUESTIONS AND RECORDING FORMAT

SURVEY INTRODUCTION

I am _____ from the ESA training office. I'm working with OFCCP to develop a desk audit skills course that will be primarily for EOS' who had less than a year of field experience in conducting supply and service reviews before consolidation.

Right now, we're interviewing EOS' who are likely to be in the course to find out exactly what areas the training should cover. By doing these interviews, we'll be able to pinpoint the skills and knowledge that EOS' themselves say they need and we can custom-tailor the course to meet your needs. The survey gives you a unique chance to tell us exactly what areas you need to know more about in order to conduct a quality desk audit.

Do you have any questions so far?

The survey will work this way:

I'll read a series of questions about specific parts of a desk audit. Some will ask whether you can do a specific task and some will be open-ended questions that require more than a "yes" or "no" answer. The survey will take about an hour.

Please be as candid as you can in answering the questions. If you can't do something, please don't hesitate to say so, since the only way we'll know that you need certain items in this course is if you say so. By the same token, if you <u>can</u> do something, please say that. If enough people already know how to do specific things, we won't waste course time on that item. And since we're interviewing only a small number of all the EOS' who will be taking the course, your answers are very important.

I want to assure you that all survey results will be kept confidential. We'll use the results only to develop the course.

Are you ready?

SURVEY INTRODUCTION - PAGE 2

First, let me get some background data: AREA OFFICE _____

(1) Where did you work before the consolidation?

(2) Did you have any experience in conducting supply and service reviews before the consolidation?

YES

NO

(3) If so, how much experience did you have?

(4) If not, what type of work did you do before the consolidation?

(Excerpt)

TRAINEE SKILLS AUDIT QUESTIONNAIRE

	YES	NO
1. Do you know what criteria a contractor must meet in order to be required to have a written AAP?		
2. Do you know how to verify that a contractor is subject to 11246 requirements?		
3. If a company will not tell you whether or not it meets the criteria for 11246 coverage, do you know what action to take?		
4. (a) Do you generally look at case files of previous reviews?		
(b) If so, what significant data would you examine in the previous file?		
5. If you don't receive all the data requested in an AAP package, do you know what to do?		
No question about reasonable effort since we already know it's a need		
6. Can you determine whether a contractor's Work Force Analysis meets the criteria for "responsiveness"?		

ATTACHMENT 2

SKILLS AUDIT QUESTIONNAIRE

(IN-COURSE)

(Excerpt)

ID#_____
Today's date_____
City _____
Experience in
S&S Reviews_____

Skill Audit Questionnaire

Please use the scale below to indicate how confident you are right now that you can do each of the items listed below during the desk audit.

1.0	2.0	3.0	4.0	5.0
Not Confident	Less Confident	Moderately Confident	Very Confident	Completely Confident

Rating

1. ____ Determine if a contractor's AAP submission meets the criteria of "reasonable effort" to comply with the regulations for submitting a written Affirmative Action Plan.

2. ____ Determine if a Workforce Analysis is acceptable and if it is not, identify what deficiencies are present.

3. ____ Determine if a contractor's listing of "job groups" are acceptable.

4. ____ Determine if a contractor's availability estimate is acceptable.

5. ____ Determine if a contractor's goals and timetables are acceptable.

6. ____ Determine if a contractor has made acceptable progress toward meeting the past year's goals.

7. ____ Determine if a contractor has made acceptable progress toward meeting the current year's goals.

8. ____ Determine if the contractor has made an acceptable statement of "good faith effort" in instances where goals have not been met.

EMPLOYMENT STANDARDS ADMINISTRATION

PART II

EVALUATION OF FEDERAL EMPLOYEES' COMPENSATION DISTRICT OFFICE MANAGERS WORKSHOP

SUMMARY

The evaluation addressed a course for district office managers on how to use a new Management Information System to analyze operational problems and to track the effectiveness of improvement efforts. During the course, the managers chose their own real problems to tackle when they returned to their jobs, and developed a plan of action. The evaluation involved the training office's tracking monthly reports and interviewing managers at quarterly intervals, to ascertain the extent of action plan implementation.

GENERAL DESCRIPTION OF THE EVALUATION METHOD

Federal Employees' Compensation District Office (FECDO) Managers were trained to use the Management Information System (MIS) as a management tool. The MIS consisted of monthly summary data reports reflecting the amount and rate of production, unit outputs, and other workflow measures for each district office. Assistant Deputy Commissioners, Chiefs of Claims, Supervisory Claims Examiners, and/or System Managers from fourteen district offices attended the workshop, which was three and a half days long. The purposes of the workshop were threefold:

1. Managers learn how to examine MIS reports as indicators of operational problem areas.
2. They identify their own problem areas in district office performance.
3. They develop their own goals and strategies for resolving specific production problems. These goals were to be the benchmarks against which future change in performance would be measured.

The reason for developing the workshops in the first place stemmed from the organization's introduction of a new MIS, and the resulting resistance by some managers in accepting and using it. They saw the system as producing productivity measures which were "mechanical" in nature and which could be used primarily in a negative way. The organization's objective for the new system was to maintain an accurate data base, by improving the quality of the data and by increasing managers' understanding of how MIS results will be used to measure managerial performance.

As a means of overcoming the reactions of managers to the new MIS, the emphasis of the course was on showing managers the payoff to them by keeping good data - to show them how the system could be a valuable tool as they managed their own unit, and how it could be used to demonstrate their own successes to top management.

The course was designed to be a one-time offering (given enough times to cover all the district managers involved). The purpose of the evaluation was to ensure that managers learned how to adapt the MIS to their own needs and that they followed through in applying what they learned to measure and improve their own operation.

The following steps comprised the evaluation process. The MIS reports, which were already in place, were also used for evaluation purposes.

Explanation of process and implementation of training - Workshop coordinators explained that the trainees would develop performance goals for their units and that the Branch of Training and Development (BTD) would monitor achievement of these goals as a way of guaging workshop effectiveness. The National Office did not stipulate which goals to develop, nor would it monitor their achievement.

The training staff provided instruction in using the MIS as a diagnostic and monitoring tool. Working in teams, the managers chose to examine a situation in their units where problems were occurring but where the causes were unclear. An example was: Being able not only to determine why compensation cases were not being processed within a certain time, but also to

discern which classes of cases were being processed at slower rates than others, and thus being able to address the specific problem. The managers learned to adapt the organization's Management Information System such that it would produce the data needed to analyze such situations. They could then use the MIS to continually monitor their organization's performance and determine the effects of efforts made to improve these problem areas.

Each district office picked one to three high priority problems which they wanted to address, and set productivity improvement goals. Others in the class critiqued the plans. The training function retained copies of these plans for the follow-up process.

Collection and display of data - The training office followed up with the managers to check on the progress of implementing their plans through use of the reports generated by the MIS. The evaluator obtained productivity figures from the MIS on a monthly basis, then interviewed managers quarterly to discuss progress and problems. The follow-up continued over a nine-month period.

The following are examples of specific goals developed by the managers during the workshop and the changes in performance levels over time.

District Office Goal	Performance Level at Time of Workshop	Performance Level After Workshop (minimum of 6 months afterwards)
PHILADELPHIA		
Reduce inventory of cases under development to 8,000	9,400	4,713
SEATTLE		
Improve percentage of traumatic cases adjudicated in 45 days	46.3%	88.3%
DENVER		
Increase percentage of non-traumatic cases adjudicated in 150 days to 75%	52.5%	78.7%

As can be seen in these examples, managers made progress as intended in achieving productivity improvements. The evaluation was in the form of assessing the extent to which managers carried out their plans of action.

Report of results - The final report of course effectiveness was in the form of a memorandum to management, with attachments displaying the type of data illustrated above. The memo explained the purpose of the workshops and the process of evaluation. Conclusions were drawn about generalizable features of the training, such as the effectiveness of using goal-setting as an integral part of the training program in order to link skills training with program results.

ANALYSIS OF EVALUATION METHOD

Conditions for use

- A Management Information System with computer-generated reports, and with the capability of being adapted to produce non-routine data.
- Organizational support for collaboration between line managers and the training function to implement the new MIS, without top management's need for giving direction and oversight while the learning process occurs and follow-up data is collected.
- Influence and control by the trainer over a learning process which spans pre-course planning (to ensure that teams of employees attend the training), in-course goal-setting (related to actual job needs), and post-course follow-up (on a fairly regular and long-term basis).
- The participation in training of a management group with the decision-making authority to establish and implement goals.

Resources required

During the training itself, managers began applying their new knowledge of how the MIS could be used in their units - by selecting actual situations to address, by setting performance goals, and by planning the implementation of their goals. Because the training was so directly linked to job performance, with the groundwork laid in the course for transferring learning to the job, the evaluation process itself required few resources. The training function reviewed regularly-generated production reports for changes in areas in which managers wanted to make improvements. In addition, the quarterly interviews with district office heads, carried out by telephone, required no more than half an hour each.

Nature of information produced

The basic evaluation information produced through the follow-up was the extent to which managers accomplished the plans they developed during the training program. The evaluators could thereby assess achievement of the training's objective of enabling managers to use the existing data base to improve their operations.

Advantages

- The evaluation was based on plans which the district office managers formulated during training and which were directly related to their own situation.
- The objectives in the plans were in concrete terms and thus accomplishments were easy to track.
- The evaluation could be based on the MIS reports and thus did not require additional record-keeping.
- The fact that district office performance was not monitored after training by top management, but rather by the training office, made the process less threatening to managers.

Limitations

- The plans contained various types of goals, and thus comparisons of course effectiveness had to be made in terms of individual goal achievement not group results. Any summing across the class would be limited to numbers of participants achieving or exceeding these heterogeneous goals.

Reference

Brendan Branley, Chief

Branch of Training and Development

Employment Standards Administration

Room S3013C

Department of Labor

200 Constitution Avenue, NW

Washington, DC 20210

(Phone: (202) 523-7036)

DEPARTMENT OF THE NAVY

NAVAL RESEARCH LABORATORY

EVALUATION OF PORTUGUESE LANGUAGE COURSE

(FOR TECHNICAL AND SCIENTIFIC STAFF)

SUMMARY

Scientists and technicians at the Naval Research Laboratory took a basic Portuguese language course before embarking on an assignment with their Brazilian Navy counterparts. The follow-up evaluation involved bringing together the group after they completed their next assignment to discuss the value of the course to their work. The semi-structured group interview process yielded specific examples of individual and group changes on the job after the training and suggestions for further training.

GENERAL DESCRIPTION OF THE EVALUATION METHOD

Scientists, technicians, and support personnel in a Systems Research and Technology group at the Naval Research Laboratory (NRL) are working on long-term research projects with the Brazilian Naval Research Lab. During two previous deployments of the Americans to Brazil, both aboard a research vessel and on land, it became apparent that a language barrier was interfering with effective and safe project work; the limitations of hand signals and broken German and English were evident. One of the project leaders informed the training officer that he and his men were experiencing these problems. The decision was thus made to design a Portuguese language course to meet the general as well as specific (technical language) needs of NRL's project staff.

The course development and evaluation process involved these steps: Pre-course survey and course development; course implementation and post-course survey; pre-deployment briefing; and post-deployment debriefing. The emphasis in the description below is on the post-deployment debriefing.

Pre-course survey and course development - A pre-course evaluation determined that none of the participants had any previous formal Portuguese training; in fact only about 20% had any foreign language background. The individual chosen to provide the course was a linguistics professor specializing in Portuguese at a local university. As a native Brazilian, the instructor was cognizant of the linguistic and cultural problems that arise between Americans and Brazilians.

The instructor and NRL's training specialist worked closely together to ensure that the course met the special technical and scientific needs of the project group. A course was designed to focus on vocabulary building, conversational Portuguese, and technical and scientific words and phrases specific to the group's specialty (oceanography).

Course implementation and post-course survey - The language training consisted of twenty sessions given over a ten week period. The participants met twice a week for two hours during duty hours. The classroom training was augmented with home study in the form of audio cassettes. A post-training survey was used to obtain participant feedback on the course achievements, difficulties, and restrictions, and to solicit suggested changes for possible future Portuguese training.

Pre-deployment briefing - Following the actual language training the group members were briefed by State Department officials on the current political and socioeconomic events in Brazil. The session was recommended by NRL's trainer to supplement the language portion of the training.

Post-deployment session - As the main objective of the course was to improve the group's performance while on deployment in Brazil, the final course evaluation could not be held until the group returned from the Brazilian deployment, five and one-half months after the completion of the course. The individuals spent varying amounts of time (from two to six weeks) in Brazil. As before, time was spent aboard a research vessel as well as on land.

The post-evaluation was held at NRL during duty hours. The debriefing took about one hour and was held by the NRL training specialist who co-developed the course. The instructor was not present at this interview. However, when carrying out this type of evaluation the instructor's presence is optional; the evaluator needs to decide if the instructor's presence would help or hinder the information-gathering process. Fifty percent of the class completing the course were present, as well as two individuals who due to job commitments were unable to attend the Portuguese language training. These two individuals attended on their own because they felt they had some significant contributions to give at the debriefing. In fact they acted as an informal control group.

The session was structured only to the extent that the evaluator had developed a list of general questions to promote the group discussion. The questions included these:

- Was this trip any different than previous trips?
- Was communication with your Brazilian counterparts easier or more difficult than on previous trips? Why is that so?
- Has the language training been of any value? If so, how?
- Would you take a second, more advanced course in Portuguese?
- What changes would you like to see in the format of the Portuguese language training?
- Would the individuals who didn't attend training attend a training course in the future?
- How can training be of further assistance to your group in this specific area?

The discussion was allowed to flow from these questions. In some cases, the group addressed the questions before being asked, anticipating areas of concern such as course impact and needed changes. The brainstorming effect fostered by the open discussion enabled one comment or suggestion to lead to others and likely produced more information than would have been produced through individual interviews.

Analysis of follow-up feedback - Participants' comments were noted by the evaluator during the debriefing and summarized into the following four categories:

1. Suggestions regarding original Portuguese language training.
2. Suggestions regarding future Portuguese training.
3. Comparison of experiences between project staffers who had taken the language training and those who had not.
4. Behavioral change which occurred as a direct result of the training. Examples include the following: Americans and Brazilians were able to work more closely during the last cruise, as both groups practiced their language with each other (the Brazilians had taken English language training between cruises); thus language barriers were eased. Results included not only greater ease and efficiency in carrying out project work, but also greater camaraderie and rapport. One further example (perhaps the most important) was the increased group safety due to foreign language ability, reducing the potential risk of accidents at sea with explosives and heavy equipment.

Conclusions and results - The following changes were made as a result of the information gathered in the evaluation process:

1. A second basic Portuguese language training course would be conducted in a six week format for project members not able to take the original training and for new project staff.
2. A new intermediate Portuguese language training course would follow the basic course; the course would run eight weeks and would enhance the ability to converse, as well as serve as a refresher for staff before they departed for their next deployment.
3. The two new courses would contain certain content changes based on the evaluation results.

ANALYSIS OF EVALUATION METHOD

Conditions for use

- Ability of evaluator to re-group course participants; this ability depends on the commitment of the participants and their managers to the course and its improvement, as well as the geographical dispersion of the participants. (If necessary, the evaluator can assemble a portion of the class and individually interview the remainder.)
- Building in the idea of a follow-up course evaluation at the time of the course offering, to gain support of the participants for the follow-up.

Resources required

The primary resource required is the time of the evaluator to conduct the follow-up interview and analyze the qualitative data, and the time of the participants to attend the follow-up interview. Another important resource is an evaluator with facilitator skills to ensure the development of a dialogue that will produce usable information.

Nature of information produced

Due to the loose structure of the group interview, the information is qualitative and heterogeneous. Perceptions of the individuals about impact of the training on job performance can be obtained during the discussion, as well as any consensus that the group may be able to reach. Comments can also be solicited on the course process and content.

Advantages

- Group process stimulates individuals to remember specific examples of behavioral change.

- Where additional information exists (e.g., pre- and post-course questionnaires) and indicates that follow-up training may be needed, a follow-up interview in the form of a group discussion will allow specific needs not covered by the traditional evaluation process to surface and be discussed. This can essentially turn into a second needs assessment process.
- If the group includes individuals who have not participated in the training process, but who had to function side by side with those who were trained, the evaluator has a built-in comparison group; discussions of the relative value of the training can occur between the two groups.

Limitations

- Enough time must be set aside for conducting interviews as well as the interpretation of the data gathered in the process.
- May not be able to bring together a sufficient number of trainees to develop a meaningful group discussion and useful feedback.
- The semi-structured nature of the group discussion may produce dialogue which is not directly focused on the issues at hand; on the other hand, if the process is too structured, the atmosphere may become too restrictive to allow the free flow of information, ideas, and feedback. The evaluator, or whoever is conducting the group interview, needs to strike a balance between the two situations.

Reference

William H. Brown III
Naval Research Laboratory (Code 1842)
4555 Overlook Avenue, SW
Washington, DC 20375
(Phone: (202) 767-2956)

U.S. OFFICE OF PERSONNEL MANAGEMENT

THE PARTICIPANT ACTION PLAN APPROACH, A GENERIC FOLLOW-UP EVALUATION METHOD

SUMMARY

The Participant Action Plan Approach (PAPA), a generic evaluation method developed by the U.S. Office of Personnel Management, is used to determine the extent of behavioral change which has occurred as a result of participants' attending a training course. At the end of training, participants fill out an action plan - a list of changes they want to implement when they return to their jobs. The evaluator follows up with the participants several months later, through interviews or questionnaires, to obtain specific examples of change, as well as other data such as factors interferring with attempted change and the impact on the organization of new efforts made by participants. In addition to an outline of the method, the description below includes specific agency applications which demonstrate some of the variations of the PAPA technique.

GENERAL DESCRIPTION OF THE EVALUATION METHOD

The Participant Action Plan Approach (PAPA) is a method for assessing the extent of individual behavioral change on the job due to participation in a training course or other type of formal learning experience. It is a flexible technique which can be adapted to a variety of courses, organizational situations, information needs, and available resources. The method was originally developed particularly for course subjects which are difficult to measure through such means as testing, observation, or collecting productivity data. It was also designed such that it could be implemented after a course had been developed and put in place.

PAPA is based on the concept of participants' developing action plans - statements of what they will do differently when they return to their jobs. The plans are to be based on the training program completed. The training evaluator then uses the plans to follow up with the participants several months after course completion to obtain information on what behavioral changes the participants have actually made. While the notion of action planning is not new or unique, PAPA takes that process one step further and uses it as a vehicle for evaluation of training.

The basic approach consists of five steps: Planning; in-course activities; follow-up activities; analysis and conclusions; and final report. These steps are described below and include some variations on the theme. An approach to collecting behavioral change information without the use of action plans is also noted. Finally, brief examples are provided of the use of PAPA in different agency settings.

The Basic Participant Action Plan Approach

Development of a plan for PAPA - In this first step, the evaluator determines the specific actions to take to implement PAPA, given the organization's information needs and the resources available. The decisions are made in concert with the "client," the person(s) for whom the evaluation information is being provided (which in some cases may be the individual doing the evaluation). The questions to be answered by PAPA are determined, questions such as: What happened on the job as a result of training? Are changes that occurred the ones intended by those providing the course? What may have interfered with participants' trying to use on the job what they learned in the training? The specific design features for using PAPA are selected at this time, such as whether to follow up with participants by interview or by questionnaire.

Conduct of in-course activities - This step consists of two stages. At the beginning of the training, participants are introduced to the idea of an action plan and are asked to consider throughout the course what they might want to do differently on their jobs as a result of the training. Then at the end of the training, participants are asked to write an action plan - a list of new activities, related to their learning experience, which they plan to try when they return to their jobs. The participants are encouraged to express their action items in specific behavioral terms. A portion of an action plan might have such statements as these:

I plan to:

1. Talk more openly with my employees when things go wrong.
2. Involve my employees more in making decisions about our shop operations.

Forms can be provided at the beginning of the course which participants can use throughout the training to record ideas for changes on the job and as guidelines for writing action plans (see Attachment 1). An action plan form is used at the end of training for participants to record action items; written guidance can be provided to the group to aid them in developing items (see Attachment 2). Options for the in-course step of PAPA include: setting aside time each day for participants to record ideas; and having pairs of participants discuss their plans with each other as a way of ensuring the plans are realistic and clear.

The evaluator keeps one copy of the participants' plans, to use during the follow-up.

Follow-up with participants - At a planned time after the training (usually one to six months later), participants are contacted either through interviews or questionnaires. They are asked questions about implementation of action items, other new behaviors attempted as a result of attending training, the effects that their new or changed behaviors have had on their work environment, and what if any problems have occurred in transferring what they learned to the job.

If interviews are used, they can be done in person, by phone, or through a combination of the two. If the interview approach is used, a good policy to follow is to send a reminder letter to participants asking them to think about the implementation of their action plans and indicating that they will be contacted shortly (see Attachment 3). Even for telephone follow-ups, an appointment should be made with the participants for the interviews. A semi-structured interview format can be used (see Attachment 4), with a copy of the action plan in front of the interviewer (and preferably the participant as well). The key to the use of PAPA as an evaluation tool is to obtain specific information about behavioral change. Probing, asking for specific examples, and having the participants compare performance pre- and post-training, are techniques to elicit information useful in assessing course effectiveness.

The two methods of interviewing each have their advantages. In-person interviews, for instance, enable the interviewer to react to non-verbal cues, to establish rapport, and to see samples of work products related to behavioral changes. Telephone interviews enable the interviewer to reach geographically dispersed participants and may in some cases put participants more at ease if they are describing less than successful results of attempted on-job changes.

The questionnaire approach to following up is useful if time is not available to conduct interviews. On the other hand, the problems of using questionnaires apply here as in other situations - return rate can be low and responses are likely to be at different levels of detail and completeness. Given the criticality to PAPA of specific examples of behavioral change and the effectiveness of methods such as probing to obtain such examples,

interviews tend to provide better quality data. Examples of instruments for the questionnaire approach are found in Attachment 5.

Other variations in the follow-up step, besides the basic method of collecting data, include these:

- Contact a sample of participants rather than an entire class. This is particularly appropriate when interviews are used and the participant population is large. If questionnaires are used, the whole class should be contacted unless the group is of considerable size.
- Following up with supervisors, subordinates, and/or peers of the participants. This effort can provide corroboration of participant information, add examples of change, provide a basis for possible future organizational consultation by the trainer if discrepancies appear among the various respondents, and increase overall the richness of the data. The organization's climate, however, may make such contacts appear threatening to the participants and may inhibit what participants develop for their action plans. Furthermore, the time for such additional contacts may not be available. Finally, evidence has shown that, with proper interview techniques, participant self-reports of change match the reports of others working with the participants.
- Reassembling the class to fill out the questionnaires. This approach can ensure a high response rate if most members of the class are able to meet. It also provides an opportunity for a group interview to discuss the use of new skills and knowledges

on the job. Particularly if the participants' jobs and work settings are relatively homogeneous, a discussion may trigger more examples of change and ideas for program improvement than would be generated by each person responding separately.

- Involving the participant's supervisor before the training. Ideally supervisors discuss beforehand the training program an employee is to attend, to clarify expectations about what can be learned and used on the job. Particularly if the learning objectives are clearly performance-based - related directly to the work - pre-course supervisor/employee discussions will set the stage for learning and for the development of an action plan immediately relevant to the job and likely to be supported by management.
- Tailoring both in-class action planning and follow-up questions to course objectives, modules, subject areas, or some other structure which would enable participants to focus systematically on each course segment or goal, and would enable the evaluator in turn to collect and analyze information along pre-determined and easily usable lines.

Analysis of findings and development of conclusions - The fourth step of PAPA involves sorting, categorizing, and displaying the data collected in order to show the extent and type of change. The information can be displayed in the form of descriptions of behavioral change; it can be summarized numerically (e.g., how many of the class participants changed in certain ways); or it can be reported using a combination of narrative and numbers.

The following are the kinds of data that can be analyzed:

- The action items themselves. Do items match course intentions?
- New behaviors displayed on the job. How much were they related to intended changes? How closely were changed behaviors related to course objectives? How many people attempted what kinds of change?
- Outcomes of behavioral change. What results occurred when participants attempted change? How did changed behavior impact the organization?
- Judgment of outcomes. Was the result of the behavioral change and outcome positive? negative? mixed? If outcomes of change were not positive, the nature of the training program needs to be re-examined.
- Problems and concerns. What barriers or difficulties did participants encounter when attempting change? Does the course need to be modified? Should the training staff take other actions, such as follow-on support or consultation with participants or others?
- Planned behaviors. If participants cite a number of intentions of change in the future, additional follow-ups may be required.
- Non-behavioral changes. Attitudinal and knowledge changes can be separated from behavioral changes in the data analysis, and each type of "change" can be compared to course intentions.
- Course comments. Participants can be asked about their reactions to the course, from the perspective of having been back on the job for a period of time.

Development of report - The data collected, analyses made, and conclusions drawn can be presented in a report in whatever format and level of detail is appropriate to address the client's interests and needs. The results of a

PAPA evaluation can be used for such purposes as:

- Revising the training.
- Attracting appropriate participants to the course.
- Investigating possible supplements to the training, such as technical assistance on the job, additional training, or job aids.
- Justifying continuation of the training.
- Comparing effectiveness of different training programs or formats.
- Providing line managers with information they need to make decisions about sending employees to a training course.

Following Up Without Action Planning

A major variation on the PAPA process described above is to follow up with participants without having them fill out action plans during the course. Instead of starting the interview or questionnaire with action plan items, the follow-up can begin with a general question about anything participants may be doing differently on their jobs as a result of training. Specific questions and probes can follow, as with the standard approach. If the course content can be segmented by objective, module, subject matter, etc., specific questions can be added about any changes which may have occurred in each specific area. As with PAPA, concrete examples of behavioral change are critical to data quality.

Agency Examples of PAPA Applications

During OPM's testing of PAPA, the method was used in the following courses: A management communications course (using transactional analysis) for civilians in a military setting; a personnel management course for supervisors at a

large agency; an interagency position management course for personnelists and supervisors; a course on training evaluation previously offered by OPM; a team-building course for managers in two divisions at a military base; a university-provided course for local police managers. The PAPA applications summarized below were done independently by the agencies cited and demonstrate various uses of the method.

Department of Energy - The "Participant Prepared Action Plan" was incorporated into DOE's Management Development Seminar. This five-day course taught by contractors is attended by mid-level managers. The course covers a range of basic management techniques, particularly emphasizing decision-making, problem-solving, team-building, and interpersonal communications.

A standard action plan process was used to evaluate the seminar. Care was taken at the beginning of the class to explain the action planning and follow-up procedures. Participants were given guidance materials and forms early in the session, with examples of action items drawn from the DOE setting.

A member of DOE's training staff conducted follow-up interviews. Results confirmed that the seminar was essentially on target, but that it could be improved in a couple of ways, namely, that certain areas should receive more emphasis in the course than others, and that more opportunity should be made available during the course for application and practice of certain skills. These suggestions were provided to the contractor, with changes to be made in future offerings.

The contractor was supportive of the action plan process, as the process

tended to create more incentives for the participants to concentrate on how the course information could transfer to their jobs. As has been shown in other action plan efforts, participants responded positively to the notion that the training office was interested in how the participants were transferring what they learned to their jobs. Participants seemed to appreciate a reminder after a period of time that a training staff member would be contacting them for a discussion of action plan implementation. Thus the action planning procedure served as a vehicle for motivating participants to change, as well as a means of assessing change.

For information on DOE's use of action planning, contact:

Stephen Rosen
Employee Development and Training Division
Office of Personnel, Room 4E040
U.S. Department of Energy
Forrestal Building
Washington, DC 20585
(Phone: (202) 252-8496)

Test and Evaluation Command, Department of Army - The Test and Evaluation Command (TECOM), part of DARCOM, Department of the Army, has incorporated the requirement for an action planning process based on PAPA into a regulation on evaluating civilian training effectiveness. The regulation was developed as a means of relating training to job performance and mission accomplishment, and covers TECOM headquarters and its installations (including, for example, Aberdeen Proving Ground and White Sands Missile Range). Before being issued,

the process was tested at a headquarters division, in order to ensure that the system was practical and provided useful information.

Under the regulation, installation civilian personnel offices send out a form (Supervisory Objectives and Employee Action Plan) to supervisors of employees scheduled to attend certain training. The form requests that supervisors describe their objectives in nominating the employees for the course and what is expected of the employees as a result of their attending the training. The supervisors are to complete that first part of the form at least one week before the class begins and are to provide the form to the nominees; discussion between supervisor and employee is encouraged. Within five days of course completion the employees are to complete the second part of the form, which includes an action plan sheet along with guidance on writing action items (adapted from PAPA). The employees are then to send the original action plan to the civilian personnel office of the installation, with employee and supervisor each retaining a copy of the plan.

Three to four months following completion of training, the personnel office sends a second form (Evaluation of Supervisory Objectives and Employee Action Plan) to the supervisors. The employee fills out the first part of that form, answering the following questions:

1. Describe how you tried to implement your action items (what you did, how you did it, who or what was involved).
2. How is what you are doing now different from what you were doing before you attended this course?
3. What do you perceive as the benefits to TECOM, your organization,

or to your job performance? (Examples: dollar savings, reduced time, improved methods, increased productivity, better finished product, etc.)

4. If you were unable to carry out any of the action items, why? (Has the right opportunity not presented itself? Have things changed in the organization so that certain items are no longer relevant? Are there other reasons?)

The supervisor uses the second part of the form to answer these questions:

1. To what extent were your objectives met? (Check one: Fully; partially; none). If you checked "None," please explain why.
2. What is the employee doing differently as a result of the training? Give specific examples.
3. What do you perceive as the benefits of the training to TECOM or to your organization? (Examples: dollar savings, reduced time, improved methods, increased productivity, better finished product, etc.)
4. Would you recommend this course to others? (If so, who or what types of employees?)

The follow-up forms are returned to the installation's personnel office for analysis. Based on a composite evaluation of individual course analyses, the installation can assess the overall results of training completed in relation to job/mission improvement. Feedback can be provided to managers and supervisors on the results. Individual personnel offices may choose to obtain additional or expanded information through such means as interviewing supervisors of participants.

This process is required for only certain types of civilian training, namely, those of 40 hours or more, regardless of cost, and those costing $500 or more for a combination of tuition/fee, travel, and per diem. Exceptions to these requirements are courses which are part of a planned, progressive career development program (e.g., intern, executive development, upward mobility programs). These programs all include individual development plans and continual monitoring of employee progress.

The installations were asked to report on their experience with the system at the end of the first year of operation. One general conclusion is that the system has caused supervisors to think carefully about the link between the training being considered and its contribution to the employee's job performance. Some installations were able to show training-related dollar savings, even though much of the training in TECOM consist of highly technical, state-of-the-art courses for scientists and engineers.

For information on TECOM's use of action planning, contact:

Department of the Army

Headquarters, U.S. Army Test and Evaluation Command

Aberdeen Proving Ground, MD 21005

ATTN: DRSTE-PT-C

(Peggy Harmon)

(Phone: (301) 278-4170)

ANALYSIS OF THE EVALUATION METHOD

Conditions for use

- Willingness of course director to have action plan process built into course.
- Organizational support for follow-up contact with participants after course completion.
- Instructions and forms for in-course action planning and for following up (interview formats or questionniares).
- Participant "buy-in" to action plan process, and cooperation during follow-up data collection.

Resources required

The time required on the part of the evaluator is primarily related to conducting the action plan exercise during the course - about an hour (although this could be done by the instructor); preparing for and carrying out the follow-up (interviews may take 30 - 60 minutes each); and analyzing and writing up results (can be double or triple the time that it took to do the interviews if that option is used). Clerical staff can be used to prepare questionnaires for mailing and tracking their return. The participants, aside from spending time to do the action plan, are required to devote the 30 minutes or so to the interview or questionnaire process. As PAPA is a generic evaluation method, the standard forms, instructions, interview guides, etc., can be adapted to any particular situation with minimal resource investment.

Two kinds of expertise are required to apply PAPA. If the recommended follow-up approach is chosen, interviewing skills are needed. Training can be provided to those who conduct the interviews; also time can be saved by using

more than one interviewer, as long as all interviewers have the same understanding of the nature of the course, the questions to ask, and the type of information which is to be collected. Basic analytical ability is needed to sort and synthesize the data and draw logical conclusions, but no statistical analysis is required.

Nature of information produced

PAPA yields qualitative data primarily on behavioral change brought about by training. The changes may have been those intended by the instructional process or they may have been incidental to the course's objectives (such as information obtained from others in the class and useful in the participant's own setting). Depending on the follow-up questions asked, information may also be obtained on participant reactions to the course, on what they felt they learned, and on the organizational results of any behavioral changes.

Advantages

- Can be used to assess a variety of courses, particularly those difficult to measure through objective techniques.
- Can be used by itself, or in concert with other evaluation approaches.
- Design of the process, and nature of questions asked in follow-up, can be changed to meet particular information needs and organizational circumstances, while retaining the basic approach.
- Does not require extensive evaluation or measurement expertise.
- Can be used for different training and development formats, e.g., short classroom courses; executive development programs (individual development plans can become the action plans; follow-ups can be made after each assignment or course); career counseling efforts (again, an individual development plan can be the vehicle for follow-up by the

counselor).

- Course being evaluated need not have behavioral objectives, nor are pre-course measures necessary to assess change; PAPA can still be used if either or both of those conditions exist.
- The action plan can serve as a vehicle for supervisor/participant discussions about using what was learned on the job.

Limitations

- Relies on self-reports, and on skilled interviewers to obtain specific information needed.
- Time required for interviewing and analysis; possibility of limited quantity and quality of data if questionnaires used.
- While PAPA can provide a "red flag" for areas needing improvement, additional data should be gathered if consideration is being made to discontinue course.
- Is not the best approach to use when more direct means are available to assess behavioral change.

Reference

Ruth Salinger
Training Resources Management Division
Office of Training
U.S. Office of Personnel Management
Box 7230
Washington, DC 20044
(Phone: (202) 653-6173)

ATTACHMENT 1

GUIDELINES FOR WRITING ACTION ITEMS

IDEAS FOR ACTION ITEMS

Course _____ **Dates** _____

Ideas I would like to try out when I return to work, based on what I learned in this course.

Note: You can use the course objectives, what you learn in class, the course handouts, conversations with others, etc., to come up with ideas.

GUIDELINES FOR WRITING ACTION ITEMS

I. What an Action Item Looks Like

A. The most important characteristic of an action item is that it is written so that you—or someone else—will *know when it occurs*. One way to help achieve this is to use specific *action verbs*. The following is a list of such verbs: [1]

Mental Skill		Physical Skill	Attitude
State	Demonstrate	Execute	Choose
Name	Discriminate	Operate	Volunteer
Describe	Classify	Repair	Allow
Relate	Generate (a solution)	Adjust	Recommend
Tell	Apply (a rule)	Manipulate	Defend
Write	Solve	Handle	Endorse
Express	Derive	Manufacture	Cooperate
Recount	Prove	Calibrate	Accept
	Analyze	Remove	Decide to
	Evaluate	Replace	Agree

B. As you are working on the action items, ask yourself: *Is the behavior described observable?* Will it be obvious to me or others when it happens?

C. Examples of action items:
As a result of being in this course I plan to:

1. *Describe* this course to my supervisor within a week of my returning to the job. As a result, my supervisor will know: the contents of the course; how I can apply what I learned to the job; and whether or not others in the organization should attend.
2. *Handle* every piece of paper only once in order to improve the management of my own time. Begin as soon as I am back on the job.
3. *Apply* the principles of performance analysis to the problem of incomplete and tardy case reviews in my division; request assistance from the training office, as needed. As a result, I will know whether training is required and/or some other solution is appropriate to reduce the problem. Begin within a month upon returning.
4. *Talk* with my employees directly about a problem which arises, rather than avoiding a confrontation; discuss the situation in order to reach mutual understanding.
5. Within two weeks after I return, *negotiate* with my supervisors to implement a _____ system in my unit, and come to an agreement on whether or not I can proceed.

II. Implementing the Action Item

A. As you proceed to develop action items, be sure to *think of yourself in your actual job setting*, implementing the activity you have described.

B. If you have an idea of *when* you will be able to begin implementing the action items, you can make a note of it. Three categories can be chosen: (1) "as arises" (you don't know when the opportunity to try this item will occur); (2) "within 2 months"; and (3) "after 2 months."

C. You may find that you cannot try out your ideas exactly as you envisioned them, or that it is difficult to be specific. That's o.k.—it is still important to write out your *intent*, as a tentative plan, knowing you may have to modify it once you are back on the job. *Try to develop at least two or three action items*—one may not work, so it's handy to have others.

[1] Chart modified from *Interservice Procedures for Instructional Systems Development: Phase II-Design*, Robert Branson, et. al., Florida State University. AD-A019, page 12.

ATTACHMENT 2

ACTION PLAN FORM AND QUESTIONS

ACTION PLAN

COURSE TITLE _____ NAME _____

DATES _____

ACTION ITEMS I plan to:	Start to implement (check if known). within 2 months	after 2 months	as arises

QUESTIONS ABOUT YOUR ACTION ITEMS

A. *Preliminary Nature of Plan*
- Were you specific in writing the action item?
- What will you need to do when you return to work in order to find out which actions are possible?

B. *Resources*
- Who would be carrying out the proposed action, or helping with it (formally or informally)?
- Are the skills for carrying it out available?
- How much time would this take?
- Are there special materials or equipment required?
- What is involved in obtaining them?
- Will you be using a tool or system or aid from this course?
- How much adaptation is required?
- Is continual monitoring or follow-through required?
- Who will do it?

C. *Implementation*
- Do you have the authority to implement the action?
- If not, who does?
- How do you think you can go about getting approval?
- What do you think the degree of support is for your idea?
- Will you need to sell people on it?
- Who?

D. *Effects*
- Whom will this action affect ?
- How will it affect them?
- Will anyone be the worse for the results?
- Anyone improved?
- What will be affected?

E. *Environment*
- What in the organizational environment might interfere with your doing this?
- What in the organization would support your efforts?

ATTACHMENT 3

FOLLOW-UP LETTER (INTERVIEW)

SAMPLE FOLLOW-UP LETTER

Dear _____,

Several months ago you attended the course (___name of course___). At the end of the program, you developed some action items—ideas for new behaviors—you might try out once you returned to your job. At that time, I said that I would be getting in touch with you to find out how you were doing in implementing your plans.

Now is the time! Either I or another member of our staff will be calling you in a week or so to make an appointment to talk (by telephone) about your action plan. As a result of our discussions with all the course participants, we will be able to tell the course director how the course has affected the way participants now do their jobs. As you know, our report will cover the class as a whole, and no names will be used.

During our conversation we will ask you how you fared with the action items you wrote down, about anything else you've tried since returning to your job, and about any problems you might have encountered. This information will be used to improve the course and ensure its usefulness to participants once they are back on the job.

Sincerely yours,

ATTACHMENT 4

INTERVIEW FORMAT

INTERVIEW GUIDE AND DATA LOG

Directions

This attachment contains suggested questions to be askeo during the interview. Probes for getting very specific information follow the initial questions. Use them as appropriate. Space is provided below the questions for recording the participants' answers.

Course _____ Today's Date _____

Does participant have action plan? _____ Interviewer _____

Name _____

Guide for the Interviewer

This is (your name) from (name of your office).
We talked (say when) and arranged to discuss your action plan.
Is this still a good time?
Do you have your action plan from the (name of course) course in front of you? (IF "NO") Can you get it now? (IF "NO") We can work from my copy.

What I'd like to do is go through the items you wrote down at the end of that course, and ask you some questions about them. Then you can bring up anything we might have missed, including any behaviors resulting from training which were not on your action plan.

(Make sure answers are specific enough so that you can envision the behavior being described.)

Let's start with the action item which says, _____

_____

_____

INTERVIEW GUIDE AND DATA LOG

Have you been able to do this yet?

1. (IF "YES," THEN USE THESE STANDARD PROBES, AS APPROPRIATE. IF "NO"—GO TO # 2.)

- Could you tell me more about that? What was the result?
- Could you give me an example of that? What was the result?
- How would you characterize the result? Was it positive? Negative? Did it have both positive and negative aspects?
- How did you carry that out? Who was involved? Have they been to the course? What was the result?
- Have you done that more than once? Any difference each time?
- How is that different from before?
- Were there any problems in carrying that out? What were they?
- Will you continue to do this? Foresee any problems?

Record answers below:

WHAT (with examples):

RESULT:

HOW CHARACTERIZED (positive, negative, mixed, unknown):

BEFORE:

PROBLEMS:

INTERVIEW GUIDE AND DATA LOG

2. (IF "NO," THEN USE THESE PROBES, AS APPROPRIATE.)
   - Why do you think that was the case?
   - Any other reason you can think of?
   - If the (problem) had not occurred, do you think you could have done that?
   - Are you still interested in doing this?
   - If so, how do you think you can make it happen? Foresee any problem?

Record answers below:

WHY NOT:

OTHER REASONS:

STILL INTERESTED:

CAN YOU MAKE IT HAPPEN:

(If appropriate, use previously developed questions to relate behaviors to learning objectives.)

INTERVIEW GUIDE AND DATA LOG

3. O.K., we've been talking about _____.
   Have you done anything (else) similar to this? (If "YES," use standard probes listed under #1.)

(Repeat questions #1-3 for each action item.)

4. We've talked about your specific action items. Is there anything else that you are doing differently on your job since attending the course that you think is due, directly or indirectly, to your being in that course? (If "YES," use standard probes listed under #1.)

   Anything else?

5. Is there any way you think the course should be changed, to make it more useful to you on your job?

   Anything else?

6. (Optional) What do you think about writing an action plan at the end of the course? Did it help you apply what you'd learned?

7. (Optional) What do you think about this follow-up?

ATTACHMENT 5

QUESTIONNAIRE FORMAT

SAMPLE FOLLOW-UP COVER LETTER

Dear _____,

Several months ago you attended (name of course). At the end of the program you developed some action items—ideas for new behaviors—you might try out after you returned to your job. At that time, I said that I would be getting in touch with you to find out how you were doing in implementing your plan.

Now is the time! Enclosed are a questionnaire and a preaddressed envelope. For our follow-up evaluation of this course, we would like you to answer some questions about your action items and the usefulness of the course to your job. Directions for completing the questionnaire are enclosed. If you have misplaced your action plan, call me at (your phone number) and I will send you a copy.

As you were told in class, you can be sure that your privacy will be protected in any use made of this questionnaire. Our report will cover the class as a whole, and no names will be used.

After completing the questionnaire, you may want to let it sit a day or two and then reread it before sending it directly to (address) in the preaddressed envelope. We will call you to remind you about returning it to us if we have not heard from you by (date). Thank you for your cooperation.

Sincerely yours,

Enclosures

QUESTIONNAIRE

Directions For Filling Out the Questionnaire

The questionnaire contains three sets of questions: X, Y, and Z.

Set X should be used for action items which you have tried to carry out, regardless of how successful you were in your efforts.

Set Y should be used for action items which you have not yet tried to carry out.

Note: *For any action item, use only one set of questions,* either X or Y, not both.

Set Z should be answered regardless of what happened with the action items.

Procedure

1. Look at your action plan and, taking each action item in turn, decide whether it is a Set X or Set Y item.
2. Copy each action item in the blank at the top of the appropriate set of questions, either X or Y.
3. Write your answers directly below the questions. If you run out of space, use the other side. Any unused parts of the questionnaire can be thrown away.
4. Set Z contains questions that are self-explanatory. As before, please record your answers below the questions.
5. After you have completed your questionnaire, please place it in the enclosed envelope and mail it back as soon as possible.

   Thank you.

SET X

Name _____ Date_____

I am discussing the action item which says: _____

_____

a. Describe how you tried to implement this item, including, as appropriate, the following information:

- What you did or said
- How you did it
- Who was involved
- How often you tried it

Please be specific enough so that the reader can visualize what happened.

b. Describe what happened when you tried to implement this item.

- What happened as a result?
- How do you feel about what happened?

(Was it positive, negative, partly positive and partly negative, or don't you know yet?)

SET X

c. How is what you are doing on this action item different from what you were doing *before* you attended the course?

d. Did you have any problems in trying out this action item? If so, what or who got in the way of doing it?

- Was there anything else you needed to know in order to carry out this action item?

e. Do you think you will continue to try out this action?

SET Y

Name _____ Date _____

I am discussing the action item which says: _____

_____

_____

a. Describe why you were not able to carry out this item yet. For example:
   - Has the right opportunity not presented itself?
   - Have things in the organization changed such that it is no longer relevant?
   - Do you need other information or skills to try it? (What are they?)

b. Can the action item still be done? If so, what is needed to make it happen?

SET Y

c. Are you still interested? If "NO", why not?

SET Z

Name _____ Date _____

a. Is there anything else that you are doing differently on your job that you think is due, directly or indirectly, to your having taken the course? (If so, please answer any of the questions in Set X which apply.)

b. Is there any way you think the course should be modified to make it more useful to you on your job? Please list any suggestions for improving the course (course content, structure, length, etc.) you might have.

c. (Optional) Do you feel that developing an action plan as part of the course was a helpful exercise? Explain why or why not.

d. (Optional) Did you find this follow-up questionnaire a helpful exercise? Explain why, how, or why not.

APPENDICES

Appendix A - Overviews of Training Evaluation

Appendix B - Selected Bibliography

Appendix C - U.S. Office of Personnel Management Contacts

APPENDIX A

OVERVIEWS OF TRAINING EVALUATION

from

EMPLOYMENT STANDARDS ADMINISTRATION (LABOR)

and

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

(Excerpts)

IMPACT OF TRAINING IN ESA

1978 - 1980

To assess the impact of training on the fulfillment of ESA's mission it is necessary to look, first at what contributions the various training initiatives have made to achieving ESA's short-and long-term objectives. Having catalogued or listed such contributions, we must then examine the training itself, to see if it was done efficiently. By examining both these areas, we will be able to evaluate the cost-effectiveness of ESA's training efforts.

The first task in such an approach is to identify ESA's basic objectives. While it is possible to conceptualize the organization's ultimate purposes in a number of ways, for the purpose of this report we will consider three:

1. Achieving effective operations (production).
2. Providing public service.
3. Developing effective management.

Given that most or nearly all ultimate benefits to the organization will reduce themselves to one of these three categories, we must then attempt to examine how training has contributed to them. Since these are broad categories, it is useful to subdivide them into more specific elements that may be easier to define and identify. Following is our attempt to make that division. Note that this is not an attempt to be comprehensive. However, the particular items enumerated are areas central to ESA's goals in which training might conceivably make a direct contribution.

Achieving Effective Operations

1. Achieving Program Goals - Each program and sub-program sets a number of quantitative goals by which performance and production are at least partially measured.

2. Quality of Work Products - The work which is measured quantitatively (i.e. production goals are set) must also meet standards of accuracy and completeness in order to be effective.

Providing Public Service

3. Quality of Service - Factors important to serving the public include providing accurate and intelligent information to individuals and groups when required, as well as making and implementing accurate and timely decisions affecting the public.

4. Rapid Service - Not infrequently, the value of a service is heavily dependent on the timeliness of its delivery. Reducing the time lapse between the passage of new legislation, or acquisition of staff and their becoming productive is a significant staff contribution.

Developing Effective Management

5. Efficiency of Operation - Efficiency here refers to accomplishing a job more rapidly, more simply, with low errors, and with high quality.

6. Fiscal Responsibility - Because of the critically high importance of responsible money management in government, adherence to required accounting procedures, and accuracy of records are crucial.

7. Increased Management Capability - Due to increased demands on managers for the mastery of a broad range of management tools, including the use of MIS, demonstrated improvement in this capacity is a direct contribution.

Cost-Efficiency in Training

...(F)urther information is needed to determine the efficiency and economy of ESA's training efforts. This analysis should include an assessment of both the cost benefits of ESA's centralized training function and the cost efficiency with which each course is designed and delivered.

The fact that ESA's training function is centralized provides the primary opportunitiy for cost-efficiency in the entire training effort. Savings result from several factors:

-- Training resources located in the centralized unit can be quickly moved from program to program as organizational priorities shift. For example, resources can be quickly diverted to areas where there is new legislation, a consolidation, or a major change in organizational procedures.

-- Because it possesses a flexible cadre of highly trained learning specialists, ESA is rarely dependent on the use of outside contractors for training. When such contractors are used, they always supplement skills that already exist on the staff rather than providing skills not available internally. This means that central staff can monitor the quality of work performed by contractors as well as limit its use.

-- The fact that the training staff becomes familiar with subject matter and skills within various ESA programs means that they can often apply successful methods and techniques developed in one program to another program in ESA. This avoids waste and duplication and provides a cross-fertilization of working ideas.

To analyze cost-efficiency in specific courses, we need to examine current research and practice in the training and development field. Such knowledge indicates that certain characteristics are more likely than others to insure efficiency and economy. These are briefly listed below:

Focus on Specific Job Skills

-- Courses should focus on specific, identified job skills that trainees need to know in order to do their jobs. This approach, which eliminates unessential material, keeps courses as brief and tightly focused on performance areas as possible.

Written Resource Materials

-- Course should include written resource materials that trainees can take back to their offices and use as ongoing job aids.

Decentralized Delivery

-- Courses should be delivered in decentralized locations so as to reduce travel and per diem costs, which are the highest single costs for delivering training.

Self Instruction

-- Self-instruction, in which trainees work through programmed learning materials, is a very economical training method, particularly when the learning involves a transfer of knowledge rather than skills. ESA courses utilize self-instructional materials whenever feasible.

(Excerpts)

A SUGGESTED APPROACH TO TRAINING EVALUATION AS RELATED TO NASA TRAINING

Prepared for the NASA Training Officers Conference

November, 1982

Headquarters Training Office

Ellen Searcy/MS, HQ Training Director
David Cushing/MPA
Virginia M. Singh/MPA

INTRODUCTION

To many in the field of training, evaluation seems too complicated, too risky, or too costly to consider, or it warrants only limited commitment - just enough to satisfy minimal needs to appraise program success or satisfy accountability requirements. However, the gains to be achieved through cost-effective, reliable, and objective evaluation of training are substantial. It is the purpose of this report to highlight these benefits and to demonstrate that they are within the reach of every training organization within NASA.

We will attempt to do this by offering a typology and terminolgy for understanding, analyzing, and developing evaluation strategies based upon a review of the state-of-the-art of training evaluation. The topics to be covered include identification and definition of the objectives of evaluation, a summary of the major concerns and factors to be considered in evaluation, a review of techniques and instruments to match with objectives and issues....

A strictly pragmatic approach is used. Our purpose is to present a point of view and a way for the "average" training office to use evaluation in order to benefit the employee, the organization, and the prospects of the training community. While our intent is to identify and describe key points and factors involved in training evaluation, we do not attempt to proscribe a specific measurement technique or approach. We believe the needs and circumstances of each particular situation will largely determine the choices of evaluation objectives, techniques, and approaches that are appropriate.

BENEFITS OF EVALUATION

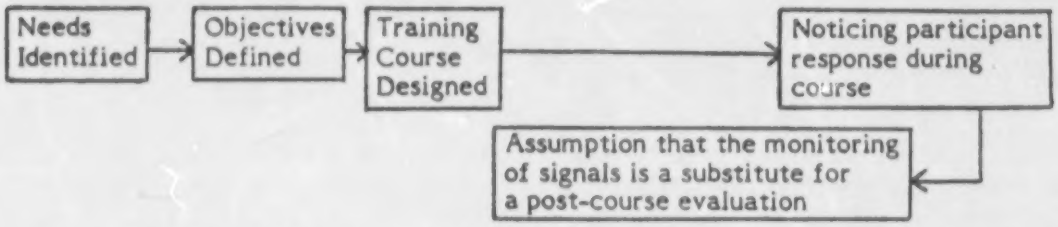
The potential benefits of training evaluation are extensive. Evaluation can be the initiator of improvement in several key areas, i.e. the training course or program itself, the situation of the training office, the credibility of the training manager, and the opportunities of employees who utilize the service (Zenger and Hargis). These benefits are discussed more fully below.

Improvement of the Training Office Situation. Accountability poses a problem for any organization, including the training office. Collecting and presenting pertinent evidence of the need for training is a constant requirement. Management support often is based solely on impression and temporary favor which is highly susceptible to change. Effective and effectively used evaluation provides a constant source of data to account for the resources applied by training offices. Clearly, a danger is apparent in those instances where results are deficient e.g. training is poorly received, learning objectives are not achieved. But evaluation data utilized properly to redesign and reprogram will produce beneficial results.

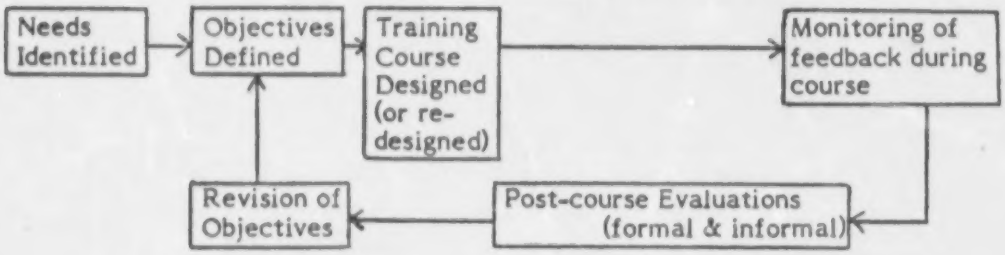
Benefit to the Training Manager. Training managers can utilize evaluation in two important ways. First, they can use evaluative responses to make changes in instructional techniques, program management, and course design. And second, they can improve their credibility with management through the use of assessment data. Evaluation data can help strengthen management's confidence in the training specialist as management realizes that the training professional shares their concern for performance improvement.

Benefits to the Client. The prime commitment of training is to the client, i.e. the trainee and the trainee's management sponsor. Ultimately, the goal of evaluation and programmatic improvement based on evaluation is the enhancement of employee and organizational performance. As improved training results in better job performance or enhanced career opportunities, both the employee and the organization move ahead.

Training Course and Program Improvement. Evaluation provides feedback needed to improve both instructional content and methodology. While it is possible to design and conduct training based on a combination of content familiarity, instructional expertise and training sophistication, there are difficulties with this approach. Intuitive judgment, even based on considerable experience and insight, cannot always provide the consistent, objective assessment required to appraise the large number and wide variety of training initatives offered by the contemporary training office. The danger in using subjective evaluation of courses and programs is in the resultant tendency to leap to misleading assumptions. These assumptions serve to shorten the program development process as shown below (Goodell, p. 263):


Needs Identified
Objectives Defined
Training Course Designed
Noticing participant response during course
Assumption that the monitoring of signals is a substitute for a post-course evaluation

But the "shortened process," relying solely on the impressions, opinions, and views collected while monitoring comments and other signals, negates the ability to effectively redefine objectives and methods. Including evaluation in the program development process gives a more reliable basis for revision and redesign of the training:



EVALUATION OBJECTIVES

Our typology of evaluation objectives or data targets includes four basic types: reaction, achievement, performance/application, and organizational results. These are described in more detail below. (Kirpatrick, p. 1; Zenger and Hargis, pp. 11-12; USCSC, "A Process for the Evaluation of Training", p. 10)

Reaction

The objective of this type of evaluation is to assess participants' reactions to and remarks based upon the training experience. Reaction evaluation, i.e. obtaining data on trainees' feelings and opinions about a program, yields information about instruction, content, methods, media, and program organization. The most common techniques employed to gauge reaction are questionnaires, oral review sessions, and individual interviews. Key anecdotes and testimonials may be collected. It is important to point out that measurements of trainees' reactions do not include the assessment of achievement of learning objectives.

Achievement

The objective of achievement evaluation is to determine trainee skill or knowledge gains which reflect the accomplishment of instructional objectives. Achievement measurements gauge the degree to which concepts, principles, facts, skills, and/or attitudes are acquired by participants from the training. Achievement measurement devices typically include direct observation, written or performance tests, and self-assessment processes. These devices are intended to measure end-of-course learning achievement and do not predict the degree of transferability of newly learned abilities to on-the-job situations.

Performance/Application

The objective here is to determine changes in individual performance on the job which are a result of training. Performance and application measurements entail examination of changes in individual employee job behavior or practices attributable to training. Interviews, observation, performance tests, questionnaires, self-assessment processes, and performance appraisals are commonly employed to determine performance changes due to a learning/training experience. The identification of specific work place activities and functions which training is expected to influence is an essential element in this type of evaluation.

Organizational Results

The objective of this kind of evaluation is to determine the impact of training on an organization or the work environment. Examination and measurement of this impact usually involves analysis of such changes as costs, absenteeism, turnover rates, and organizational productivity. Such changes are commonly ascertained by the use of interviews, analysis of organizational documents, questionnaires, and surveys. From a training evaluation perspective it would be ideal to evaluate programs directly in terms of the organizational results. However, this is often difficult because of the problem of segregating variables to determine how much organizational improvement is due to training as opposed to other factors. However, inferences can be made about the effect of training on organizational improvement which substantiate the effectiveness of training.

MAJOR EVALUATION CONCERNS

Having identified the objectives of evaluation, let us now look at the factors that must be considered in determining whether and how to proceed with an evaluation. These factors include RIGOR, RELEVANCE, ECONOMY, and STAFF CAPACITY.

Rigor refers to the reliability, validity, and accuracy of measurement techniques. It is the amount of control exerted by an evaluation design and the subsequent accuracy that can be attributed to the evaluation results. The more rigorous the design, the greater the level of confidence in the evaluation results (Zenger and Hargis, p.12).

Relevance means the degree to which the evaluation couples with achievement goals and/or organizational goals. It does not refer to the linkage between course content and goals, but to the degree to which the evaluation results reflect the achievement of specified objectives.

Economy refers to the trade-off between the costs and benefits of evaluating. A range of techniques exists that offers insight into the success or failure of training. Often a less expensive approach will provide one or more of the benefits described in an earlier section. Other techniques require a substantial expenditure of capital or human resources to acccomplish a rigorous and relevant evaluation. Two available options are 1) to offer limited and thoroughly evaluated training opportunities or 2) to offer a panoply of training that addresses management's needs, as they arise, without significant evaluation. The search for the "middle ground" is one of the major questions confronting training managers (Zenger and Hargis, pp.12-13).

Staff capacity is related to the issue of economy. The availability of staff to conduct and analyze evaluation results is a key concern. Obviously, the more sophisticated the measurement, the more skill and knowledge is required. Evaluation can range in complexity from the ease of a single trainer soliciting a trainee's views in an informal conversation to the complexity of a large scale analysis of organizational impacts requiring a staff consisting of a training specialist, a statistician, and a computer programmer to determine key variables and correlations. However, evaluation expertise is available, either through the development of the training staff evaluator or by contract consultation. (Parker, pp. 19-1 through 19-23: Parker provides an excellent overview of the methodological requirements for the various evaluation techniques.)

The Relationship of Concerns to Objectives

In practice, the concerns described affect the various evaluation objectives (i.e. reaction, achievement, performance/application, and organziational results) in distinctly different ways. The following section is a brief summary of how the issues of rigor, relevance, economy, and staff capacity impact the four different evaluation objectives (Zenger and Hargis, pp. 12-13).

Reaction

Reaction queries are usually quite economical, tending to rely on brief questionnaires and interviews of individual trainees or groups. Reactive responses usually lack rigor since participants generally report likes or dislikes, anecdotes or incidents that are not always directly related to the content or substance of the training. Relevance of reactive responses to training objectives is relatively high when training is conducted primarily to convey needed skills. However, reactive information may be inadequate to determine the relationship of evaluation results to organizational need. Clearly, the fundamentals of conducting and analyzing reactive responses are the easiest to master and, therefore, pose no severe problem to the training staff. The major problem is the highly subjective nature of reactions.

Achievement

The measurement of learning achievement or knowledge gains tends to be more rigorous and relevant than participant reactions, given that such instruments as written tests, structured observation, and participant self-assessments demonstrate directly the level of mastery attained. These kinds of tests are relatively inexpensive and often may be easily developed by training office staff working with subject experts as necessary. In addition, they are appropriate for many areas of training and are an economical way of achieving the benefits of evaluation. In particular, they are useful in determining the adequacy of the instructor and the course design. Also, when achievement levels are high, the training office and the training manager can receive desirable management recognition. In addition, evaluation of achievement when accompaned by feedback to trainees reinforces learning results. For the training office which takes time to develop the instruments, achievement testing has high potential payoff at relatively low cost.

Performance/Application

Measures of performance change and application to the job may provide a good mix of rigor, relevance, and economy. Such measures are rigorous in relation to their degree of sophistication and are relevant both to achievement objectives and to organizational needs. Although more sophisticated (and expensive) devices may be used, simple instruments such as questionnaires can be constructed and administered at relatively low cost. A potential problem arises from the necessity of constructing instruments which are able to evaluate on-the-job changes. Job or task analyses are necessary in order to insure adequate evaluation. In these cases, personnel and evaluation experts will often be added to the training team, thus adding to the cost.

Organizational Results

Measurement of organizational results, i.e. organizational performance or productivity changes as a result of training, is obviously relevant by our definition. In order to collect the data required, a highly rigorous design may be developed at some expense. Evaluation design and the interpretation of results may require the assistance of an evaluation or organizational development expert. The level of insight into the mission and activity of the organization must surpass that which is required for an evaluation of a performance change of an individual trainee. The difficulties mentioned tend to make this evaluation effort a relatively expensive process requiring a high level of management support.

EVALUATION TECHNIQUES

Having decided which evaluation objectives suit need and circumstance and the ability to pursue them, we may now look at some of the techniques or instruments available to accomplish each objective. It is realized that the selection of instruments must be related to an overall evaluation design. These are included to assist training staffs to begin designing or developing their own evaluations or to work more effectively with consultants and subject experts. For the most part, these techniques for training evaluation fall into five major groupings: TESTS, OBSERVATIONS, INTERROGATIVE instruments, PARTICIPATORY techniques, and ORGANIZATIONAL analyses. TESTS include written examinations and simulations. OBSERVATIONS include all visibly

noticeable aspects of training results. INTERROGATIVE instruments include such devices as questionnaires, individual interviews, and group interviews. PARTICIPATORY instruments include all self-assessment and participant contract devices. And ORGANIZATIONAL analyses include all measurements of an organization's vital documents and statistics.

A definition and description of each individual technique follows. This section concludes with a chart summarizing the relationship of specific techniques to evaluation objectives (Chart I).

Tests

Written Test This instrument consists of a series of written items (questions, problems, exercises) which measure specific knowledge gains against specified criteria or norms. The object of the written test is to gauge the possession level of knowledges imparted to participants during training. The information gained tends to be a relatively objective measure of cognitive and/or psychomoter skills; as such, written tests constitute an effective measure of ACHIEVEMENT.

Use Requirements: time, scoring procedures, and high correlation with training content.

Advantages: relatively low administration cost, easily and quickly scored, easily administered, and a wide sampling possible.

Disadvantages: a possible low degree of relation to job performance, highly prescriptive, and potential cultural bias.

Performance Test The performance test is an instrument which requires trainee demonstration of learning (ACHIEVEMENT) or performance change (PERFORMANCE/APPLICATION) under simulated or actual conditions. The chief characteristics of data derived from performance testing include quantifiability and observability. Assuming sound design, this instrument offers great insight into knowledge gain and actual application of learnings.

Use Requrements: time, materials, equipment, and qualified raters.

Advantages: reliability and relevance.

Disadvantages: high developmental costs, time-consuming, potential difficulty in constructing a simulation which mirrors actual conditions, and possibly threatening to participants.

Observations

Non-verbal indication This technique involves observation of gestures and facial expressions among training participants; as such, it represents a potentially effective vehicle to determine REACTION. The information gathered tends toward affective, uncategorized, and inferential physical indications of reaction to training.

Use Requirements: sensitivity to physical communication and evaluative awareness.

Advantages: low cost and immediate feedback.

Disadvantages: subject to misinterpretation, low reliability.

Observation As a specific technique, observation constitutes organized surveillance of training participants. Evaluative observation may be conducted either on an incidental or structured basis. Depending on the specific information target, observation may provide a source of REACTION, ACHIEVEMENT, and PERFORMANCE/APPLICATION data. If vocal and physical indications are sought, reactive data are provided. If these indications substantiate learning gain or comprehension, then achievement is measured. And if these indications are directly related to a change in behavior or practice, or are viewed actually on-the-job, then performance and application data are supplied.

If observation is conducted on an incidental basis by a human observer, the data tends to be perception-based and random; if conducted by electronic means (e.g. videotape), the data becomes all-inclusive and can be analyzed in totality or may be subsequently broken down. Structured surveillance requires specific observation (i.e. the observer is looking for indications previously identified).

Use Requirements: skilled observers and/or equipment, observational criteria, cooperation of training participants (and their supervisors if observation takes place in the work setting).

Advantages: human observation is usually low cost, electronic observation provides a permanent record, if the observation method is concealed or relatively unobtrusive then the process is non-threatening.

Disadvantages: unconcealed observation, either by human or electronic means, can be threatening; recording equipment can be expensive; concealed observation raises privacy issues.

Interrogative Instruments

Interview An interview is a structured conversation in which an interviewer asks questions to obtain information from and impressions about the training participant or those associated with participant. The interview may seek REACTION data through solicitation of opinions, judgments, or feelings about the training; attempt to gauge PERFORMANCE/APPLICATION levels through questions regarding behavior change or learning application; and/or seek to ascertain ORGANIZATIONAL RESULTS through questions designed to identify change in the target organization due to training.

Use Requirements: time, trained interviewers, training participant, and/or organizational cooperation.

Advantages: flexibility, in-depth penetration, opportunity for clarification, and relative low costs of materials.

Disadvantages: time-consuming, personal contact is potentially threatening, and responses are potentially highly reactive and subjective.

Oral Session This instrument, a group interview, is a structured period during which responses to specific training matters are elicited either formally or informally from a trainee group. Given the complexity of dealing with more than one participant, these sessions usually attempt to solicit only reactive data (i.e. opinions, judgments, feelings). The responses are typically subjective, affective, and anecdotal.

Use Requirements: trainee cooperation and interest, time, and a skilled leader.

Advantages: immediacy, directness, low cost.

Disadvantages: leader or single member may influence other group members.

Questionnaire The questionnaire is a set of written items used to elicit data from respondents on specific aspects of training and/or work. Questionnaire formats include open-ended (the respondent is totally free to construct an individual response), the fixed-alternative (the respondent must select from among specified choices), or a composite of the two types. Open ended queries are general and narrative in form; fixed-alternative types lead to more organized , specific, and quantifiable data. Like the interview technique, the questionnaire may be designed to solicit REACTION, PERFORMANCE/APPLICATION, and ORGANIZATIONAL RESULTS data.

Use Requirements: skilled interpreters, time, participant cooperation, and/or management cooperation (particularly when attempting to gauge organizational impacts).

Advantages: relatively low cost, respondent sets pace, honest responses increased if anonymity is guaranteed. If the open-ended format is selected then response choices are unlimited; if fixed -alternative, then quick processing and standardization are possible.

Disadvantages: If open-ended, the responses are difficult to process and subject to misinterpretation; if fixed-alternative, the responses are limited.

Participatory Techniques

Participant contact This technique involves an agreement between training participants and the training staff (or among the training participants themselves) stating specific training-related knowledges, skills, and/or attitudes, and a schedule or program outlining implementation. Learning application goals and/or performance modification objectives are specific and job-based, which provide a valuable indication of PERFORMANCE and APPLICATION.

Use Requirements: participant commitment.

Advantages: participant directed and paced, potential enhancement of motivation and on-the-job reinforcement.

Disadvantages: potential resentment of training staff monitoring and follow-up, and potential organizational constraints to implementation.

Self-assessment Self-assessment procedures are those designed to enable the training participant to judge her/his own application of learnings and/or performance change on-the-job within a prescribed or agreed-upon time. Self-assessment may also be used in the classroom setting to gauge the participant's knowledge gain or accomplishment of learning objectives. This technique, therefore, may be used to obtain data relating to both ACHIEVEMENT and PERFORMANCE/APPLICATION.

Use Requirements: cooperative participants.

Advantages: useful to training participants, non-threatening.

Disadvantages: requires self-analytical individuals, data is normally unavailable to training offices and is totally subjective.

Organizational Analyses

Organizational documents This technique refers to any analysis of an organization's written records (e.g. memoranda, its reports, program budgets, production schedules and reports, performance appraisals) which measure organizational change due to training. The objects of such analyses are documentary indications of PERFORMANCE change or learning APPLICATION on an individual basis or on a work unit basis (ORGANIZATIONAL RESULTS).

Use Requirements: availability of and access to documents, time, management cooperation, and translatability of documents.

Advantages: objectivity, reliability, job-based, pre- and post-training comparability.

Disadvantages: possible subjectivity of preparer or translator, need for conversion to usable form since content of documents is not training specific.

The following chart (Chart I) summarizes the relationship between evaluation objectives and techniques, showing which techniques are used to evaluate which objectives.

CHART I

EVALUATION TECHNIQUES USED TO MEASURE
EVALUATION OBJECTIVES

TECHNIQUES	EVALUATION OBJECTIVES			
	REACTION	ACHIEVEMENT	PERFORMANCE/ APPLICATION	ORGANIZATIONAL RESULTS
TESTS				
Written Tests		X		
Performance Tests		X	X	
OBSERVATIONS				
Non-verbal Indication	X			
Observation	X	X	X	
INTERROGATIVE INSTRUMENTS				
Interview	X		X	X
Oral Session	X			
Questionnaire	X		X	X
PARTICIPATORY TECHNIQUES				
Participant Contract		X	X	
Self-Assessment			X	
ORGANIZATIONAL ANALYSES				
Organizational Documents			X	X

Evaluation Design Considerations

Four basic scientific evaluation designs representing a highly sophisticated approach are drawn from: Zenger, J. H., and Kenneth Hargis, "Assessing Training Results: It's Time to Take the Plunge!" Training and Development Journal, January, 1982.

a. The pre-test/post-test, control group design. This design has three fundamental requirements:

   - o Use the same measurement before and after training;
   - o Measure both a trained and a control group;
   - o Randomly assign people to the trained and control groups.

   If these requirements are not fulfilled, then rival explanations may be offered subsequently to account for any observed changes.

b. The post-test only, control group design. In this design neither the control nor trained group need to be measured before the training. The pre-training measure required in the previous design helps guarantee that the control and trained groups are comparably composed. If equivalence between groups is reasonably assured, their comparisons can be made reliably on post-training scores alone.

c. Repeated testing of the same group. This design involves testing the same group numerous times during both training and non-training periods. When the tests are administered frequently during both periods the evaluator can say, with increasing assurance, that extraneous factors are not responsible for changes.

d. The pre- and post-tests of trained groups design. This design relies on the same principle as the previous method. Involved are a number of pre- and post-tests of the group performed at different times in the same general setting.

"Comparing all these procedures, it is the pre-test/post-test, control group design that provides the most unambiguous evidence of training effectiveness." (Zenger and Hargis, pg. 14)

TABLE I

FACTORS TO CONSIDER IN THE DESIGN OF TRAINING EVALUATION

INFORMATION	o Who took the course? o Were the objectives met? Did the course work? o Was the course methodology and design appropriate? o What factors interfered with the consistency of course presentation or with intended learning?
PROVIDERS	o The participants in training, and the control group o Instructors and administrators of training o Job performance evaluations (e.g. supervisors, colleagues, subordinates) o Independent observers (e.g. contractor) o External experts o Training staff
INSTRUMENTS	o Interview o Non-verbal Indication o Observation o Oral Session o Organizational Documents o Participant Contract o Performance Test o Questionnaire o Self-Assessment
TIMING	o Before training begins o During training o Immediately following training o Long after training o Once o Periodically o Anytime
CONFIDENCE	o Proper sampling or measurement of entire trainee population o Expert face or content validity o Correlation with related standards or measures of performance o Research designs to control unwanted variables o Reliability/validity measurements of test instruments

TABLE II

INFORMATION NEEDS: PROVIDERS, INSTRUMENTS, TIMING AND CONFIDENCE

GENERAL INFORMATION	SPECIFIC INFORMATION	PROVIDERS	INSTRUMENTS	TIMING	CONFIDENCE
Who took the course?	Names, titles, offices classification, years in vocation, prior training, age, race, sex.	Participants training or personnel staff.	Sign-in sheets, survey/questionnaire personnel records.	Before or after training. Data need be obtained only once unless demographic change is a factor in the evaluation	Measure of population.
Were the objectives met? Did the course work?	Performance of skills taught. Recall of information. Recognition of information.	Participants observers, control group, job performance evaluations.	Post-test Pre- and Post-Performance test, written tests, questionnaire, interview, observation.	After training Before and after. Data can be obtained once, periodically or anytime.	Proper sampling, research design, expert assessment, correlation with related performance standards, reliability/validity of test.
Was the course methodology and design appropriate?	Pace, effort to learn, quantity of presentation vs. practice/exercises, placement of exercises, depth of information, level (e.g. elementary advanced), utility of reference materials or job aids, utility of course, quality of discussion.	Participants, instructor or administrator, observer.	Questionnaire, interviews, oral session, observation.	During or immediately after training. Data need be obtained only once.	Expert assessment, proper sampling.
What factors interfered with the consistency of course presentation or with intended learning?	Quality of facilities, quality of produced media/materials, instructors, crisis in the office or agency, inaccurate or changing subject matter.	Participants, observers, instructors.	Questionnaire, interview, observation.	During or immediately after training. Data need be obtained only once.	Proper sampling.

APPENDIX B

GLOSSARY

Achievement—The degree to which knowledge gains and/or learning objectives are accomplished. (See Learning.)

Application—The implementation or use of a learning upon return to the workplace. (See Behavior and Performance.)

Battery—A series of related tests administered together.

Behavior—An assessment of individual performance on the job. (See Data.)

Client—The person(s) or organization(s) for which an evaluation is conducted.

Control Group—A group of persons who do not participate in the training program but who are similar in all relevant respects to those who do participate. Control groups are used as a basis for comparison.

Correlation—A statistical process which shows the degree to which two or more events or objects are related to each other. In evaluations of training program effectiveness, correlations may be calculated to determine the relationships among factors effecting training results.

Criterion, Criteria—Measures of training effectiveness which reflect the goals and objectives of the training program. They provide a description or image of what snould happen, thereby facilitating comparisons between what should have happened and what did happen.

Data—Factual material from which conclusions may be drawn. When evaluating training, four categories of data may be obtained: Reaction, Achievement, Performance/Application, and Organizational Results.

Design—A strategy which the evaluator uses to collect data. The design usually specifies who will be measured (experimental group, control group), and when they will be measured (pretest, posttest). The purpose of the design is to guard against the possibility that something other than the treatment causes the observed effects of the training program.

Evaluation—A deliberate process which provides specific reliable information about a selected topic, problem, or question for purposes of determining value and/or making decisions.

Experimental Design—A data collection strategy which attempts to control as many relevant and irrelevant variables as possible. An experimental design gains its rigor by using control groups and random selection and assignment of individuals to groups.

Experimental Group—A group of subjects who receive the experimental treatment in a design.

Forced Choice—A special kind of multiple-choice item which forces the respondent to choose the more descriptive of two or more equally attractive or unattractive statements. This type of item is more often used in personality and attitudinal measures when social desirability of the possible responses may interfere with the selection of the alternative chosen.

Formative Evaluation—The process of judging an instructional package or process or its components during the developmental period for the purpose of providing persons directly involved with the formation of the entity with feed-back as to possible improvements. (See Evaluation.)

Historical Data—Data collected by the organization as part of its normal day-to-day functioning. It can include numerical indices such as absenteeism, turnover or production rates, and organizational documents such as agency memoranda, audit reports, program budgets, employee rating forms, supervisor appraisals, and written plans.

Hypothesis—A statement proposing a plausible relationship between two or more variables.

Learning—The principles, facts, skills, and attitudes that participants gain from training. (See Achievement.)

Matching—A pairing of subjects on the basis of background information factors such as age, level of education, or organizational status, followed by random assignment of one member of the pair to the experimental group and the other to the control group. This process, used when totally random selection and assignment are impossible, helps prevent the personal characteristics of the subjects from contaminating the evaluation results.

Open-ended—A question allowing respondents to answer freely in their own words rather than restricting their answers to a few stated alternatives as in a multiple-choice question. Although they are more difficult to analyze than multiple-choice questions, open-ended questions allow for a wider variety of responses.

Organizational Results—The impact of training on the organization or job environment.

PAPA (Participant Action Plan Approach)—An OPM-developed approach intended to facilitate and analyze the learning usage of trainees on-the-job. The approach includes five steps: planning, in-course activities, follow-up activities, analysis, and report.

Performance—The group of behaviors and/or applications constituting an individual's, group's, or organization's work actions. (See Behavior and Application.)

Posttest, Postcourse, or Posttraining Measurement—A measurement taken after the training program has ended. The resulting information can be used to determine whether or not trainees have achieved training objectives. If compared to a pretest the posttest provides a measure of change probably attributable to training.

Pretest, Precourse, or Pretraining Measurement--A measurement taken before the training program begins or during its early stages. The resulting information may be used to provide instructional designers with a picture of the skills and abilities of the average entering trainee or may be used to give the instructor an idea of how much the group already knows relative to the learning objectives. A pretest also provides a baseline for comparison against a posttest.

Procedures--Instruments, devices used to obtain data for evaluation.

Random Assignment or Selection--The selection of cases or subjects in such a way that all have an equal probability of being included, and the selection of one subject has no influence on the selection of any other subject.

Rating--The process of judging someone or something according to predetermined criteria. (See Scale.)

Reaction--An indication of how well the trainees liked a particular program, including materials, instructors, facilities, methodology, content, etc. (See Data.)

Reliability--The degree to which a device or instrument (procedure) measures a given characteristic consistently.

Rigor--A term used to describe the amount of control exerted by a design and the consequent precision that can be attributed to the findings. The more rigorous the design, the greater is the level of confidence that one can have in the findings of an evaluation.

Sample--A subset of the population, usually selected to be representative of the whole group being studied.

Scale--A graduated continuum which allows a rater to assign numerical values ranging from low to high to a given trait or characteristic. Scales generally have between three and nine categories which may or may not have accompanying descriptive adjectives or numbers.

Significant, Statistically Significant--A statistically significant event is one that has a low likelihood of happening by chance. Significance does not mean importance; it merely means that a difference, such as the difference between the scores of two groups on a postest, was due to some difference between the two groups rather than due to chance.

Subjects--Individuals selected to participate in any facet of a design.

Summative Evaluation--The process of judging a completed instructional package or process for the purpose of providing the end user with information as to its demonstrated effectiveness in a given situation. Based on this information, the user may decide to purchase the entity (if a potential user), or retain it (if a current user). (See Evaluation.)

Treatment--The training program or a variation in the training program given to an experimental group in a design.

Test—A series of questions, exercises, or other means of measuring the knowledge, skills, abilities, or aptitudes of an individual or group against selected criteria or norms.

Validity—The degree to which a device or instrument (procedure) measures what it was intended to measure.

Variable—Something that is capable of changing in value over time. One purpose of a design is to control for (limit the variability of) irrelevant variables so that the effect of relevant variables may be observed.

APPENDIX C

BIBLIOGRAPHY

Anderson, Scarvia B., et al. Encyclopedia of Educational Evaluation: Concepts and Techniques for Evaluating Education and Training Programs. Washington, D.C.: Jossey-Bass Publishers, 1975.

Brethower, K.S., and G. A. Rummler, "Evaluating Training," Training and Development Journal, May, 1980.

Bunker, K. A., and S. L. Cohen, "Evaluating Organizational Training Efforts: Is Ignorance Really Bliss?" Training and Development Journal, August, 1978.

Byham, William C., "How Assessment Centers are Used to Evaluate Training's Effectiveness," Training and Development Journal, February, 1982.

Cornwell, J.B., "Measure Your Trainees' Abilities Before You Train Them," Training and Development Journal, January, 1981.

Elsbree, Asia Rial, and Christine Howe, "An Evaluation of Training in Three Acts," Training and Development Journal, July, August, and September issues, 1977.

Goodell, Francis C., "Lest We Trainers Forget," pp. 263-64, Evaluating Training Programs (Donald L. Kirkpatick, ed.). Madison, Wisconsin: American Society for Training and Development, Inc., 1975.

Kirkpatrick, Donald L., "Evaluation of Training," (Chapter 8), Training and Development Handbook: A Guide to Human Resource Development (Robert L. Craig, ed.). New York: McGraw Hill Book Company, 1976.

Kirkpatrick, Donald L., ed. Evaluating Training Programs. Madison, Wisconsin: American Society for Training and Development, Inc., 1975.

McCombs, Barbara L., "Learner Satisfaction, Motivation, and Performance: Strategies for Positive Self-control," Performance and Instruction, Vol. XXI, No. 4 (May, 1982).

Parker, Treadway C., "Statistical Methods for Measuring Training Results" (Chapter 19), Training and Development Handbook: A Guide to Human Resource Development (Robert L. Craig, ed.). New York: McGraw Hill Book Company, 1976.

U.S. Civil Service Commission, Bureau of Training, A Process for the Evaluation of Training. (out of print)

Zenger, J.H., "The Painful Turnabout in Training: From Maslow to Modeling," Training and Development Journal, December, 1980.

Zenger, J.H., and Kenneth Hargis, "Assessing Training Results: It's Time to Take the Plunge!" Training and Development Journal, January, 1982.

APPENDIX B

SELECTED BIBLIOGRAPHY

SELECTED BIBLIOGRAPHY: TRAINING EVALUATION

Alden, J. Evaluation in focus. Training and Development Journal, 1978, 32(10), 46-50.

(Lists key questions to ask when designing training evaluation, in order to make sure that the effort is worth doing in the first place and that it produces needed information)

American Society for Training and Development. Training and Development Journal, 1982, 36(8). (Single issues of Journal can be purchased for $5.00 prepaid; write ASTD, 600 Maryland Ave., SW, Suite 305, Wash., DC 20024.)

(Articles on current status of training evaluation, practical strategies for evaluation, evaluating management training; some articles are cited individually throughout bibliography, below)

Bakken, D. & Bernstein, A.L. A systematic approach to evaluation. Training and Development Journal, 1982, 36(8), 44-51.

(Description of a systematic approach to designing evaluations for training by identifying the decision-makers who need the information and by clarifying the goals of training)

Blakeslee, G.S. Evaluating a communications training program. Training and Development Journal, 1982, 36(11), 84-89.

(Description of the general process of a "Communication Skills-Building Workshop" and the evaluation of the workshop six months later to determine change in quality and quantity of communications)

Brademas, D.J. An evaluation of a management development training program. NSPI Journal, 1982, 21(8), 12-14.

(An evaluation of a management training program designed to determine the difference in behavioral changes between participating in a 5-1/2 day workshop vs. a 3-1/2 day workshop)

Brandenburg, D.C. Training evaluation: What's the current status? Training and Development Journal, 1982, 36(8), 14-19.

(Study conducted to find out what evaluation activities are currently in use; done by surveying trainers in both small and large training units)

Brethower, K.S. & Rummler, G.A. Leverage: How to get it...What to do when you get it. (A training magazine interview.) Training, 1975, 12(10), 28-32.

(Discussion between two preeminent professionals about the training office's role in performance change and how to increase organizational influence)

Brethower, K.S. & Rummler, G.A. Evaluating training. Training and Development Journal, 1979, 33(5), 14-22.

(Presentation of a framework for viewing evaluation alternatives and deciding what evaluation is appropriate, by using a general systems model; evaluation levels considered deal with participant satisfaction with course, training's accomplishments of goals, participant use of concepts, and negative or positive impact on organization; also includes guidelines on conducting evaluation studies with a matrix of questions to ask for each evaluation level, and suggested evaluation designs)

Brinkerhoff, R.O. Making evaluation more useful. Training and Development Journal, 1981, 35(12), 66-70.

(General discussion of various purposes of and uses for evaluation information, including questions which evaluation studies can answer during planning, delivery, and follow-up/feedback phases of training)

Brown, M.G. Evaluating training via multiple baseline designs. Training and Development Journal, 1980, 34(10), 11-16.

(Discussion of the multiple baseline design, which is adaptable to most training research, and provides a convincing demonstration of functional relationships between training and improvements in employee performance)

Buchanan, P.C. A system for evaluating supervisory development programs. Personnel, Jan. 1955, 335-347.

(Discussion of past methods used for evaluation and questions to systematically answer in order to evaluate supervisory training programs)

Campbell, J.P., et al. Managerial behavior, performance, and effectiveness. New York: McGraw-Hill, 1970.

(Chapter on Methodology of Training Evaluation summarizes general designs for evaluating management training and provides practical guidelines)

Campbell, D.T. & Stanley, J.C. Experimental and quasi-experimental designs for research. Chicago: Rand McNally, 1963.

(Frequently-used reference for basic research designs in social science settings; certain designs lend themselves well to training evaluation efforts)

Chabotar, K.J. & Lad, L.J. Evaluation guidelines for training programs. Lansing, MI: Michigan Dept. of Civil Service (Dr. Donald J. Willis, Project Director), 1974. Developed for Midwest Intergovernmental Training Committee, Intergovernmental Personnel Program, U.S. Civil Service Commission.

(Illustration of the evaluation problems confronted by training offices and guidelines for solving them; the book familiarizes the reader with criteria that should be met in order to achieve an effective evaluation and with evaluation designs and sample forms)

Clement, R.W. Evaluating the effectiveness of management training: Progress during the 1970's and prospects for the 1980's. Human Resource Management, Winter 1981, 8-13.

(Reviews types of studies done to assess effectiveness of management training and general study outcomes)

Coffman, L. Successful training program evaluation. Training and Development Journal, 1980, 34(10), 84-87.

(Brief description of an evaluation process using "key clients" - usually the supervisors of trainees - to collect data on training's impact on job performance and to share findings in a group setting)

Cornwell, J.B. Justify your training efforts with on-the-job performance. Training/HRD, 1980, 17(8), 34-36.

(Provides post-training survey instruments to be sent to participants and their supervisors, designed to determine extent of performance change and the reasons for the amount of change; also suggestions for more general follow-up questions if survey instrument is not feasible)

Deming, B.S. A system for evaluating training programs. Personnel, Nov/Dec. 1979, 33-41.

(Ten steps to determining which training programs are worth evaluating)

Deming, B.S. Evaluating training programs: A guide for training the trainer. Englewood Cliffs, NJ: Prentice-Hall, & Wash., DC: American Society for Training and Development, 1982.

(Discussion of the skills needed by an evaluator of training programs, as well as a discussion of evaluation techniques to be used at different points in the training process and for different purposes of evaluation)

Elkins, A. Some views on management training. Personnel Journal, June 1977, 305-306, 311.

(Summary of evaluation of a basic management development program and the issues raised by the outcomes, such as the drop in confidence in ability, pre- to post-course, and the role of attitude about the course in changing behavior)

Elsbree, A.R. & Howe, C. An evaluation of training in three acts. Training and Development Journal, 1977, 33(7,8,9). (Three issues.)

(An example of the process for planning and implementing a training evaluation)

Fast, D. A new approach to quantifying training program effectiveness. Training and Development Journal, 1974, 30(9), 8-14.

(A method for end-of-course evaluation, based on participant selection (at the beginning of training) of personnally relevant course objectives)

Franklin, Jr., W.H. Why training fails. Administrative Management, July 1981, 42-43, 72-74.

(Reviews reasons for training efforts not being successful and suggests methods for overcoming problems)

Georgenson, D.L. The problem of transfer calls for partnership. Training and Development Journal, 1982, 36(10), 75-78.

(Discussion of the problem of transferring the knowledge and skills learned in the classroom to the job, and suggestions for doing this in an effective manner by obtaining management support)

Gilbert, T.F. Training: The $100 billion opportunity. Training and Development Journal, 1976, 30(11), 3-8.

(General discussion of appropriate ways to describe costs of training, the need to consider the training department as a "performance department," and means to improve the quality of training programs)

Gilbert, T.F. Measuring the potential for performance improvement. Training/HRD, 1978, 15(12), 25-28.

(Summary of the concepts of worthy performance, behavior vs. accomplishment, and potential for improving performance: excerpted from Gilbert's book, Human Competence)

Gilbert, T.F. A question of performance. Part I: The PROBE model. Training and Development Journal, 1982, 36(9), 21-30. Part II: Applying the PROBE model. Training and Development Journal, 1982, 36(10), 85-89.

("Profiling behavior" - PROBE - consists of a set of questions to ask about work environments in order to determine barriers to exemplary performance; the articles describe this performance analysis approach and provide an example of its use)

Goldstein, I.L. Training: Program development and evaluation. Monterey, CA: Brooks/Cole Publishing Company, 1974.

(This book describes a systematic approach to designing, developing, implementing, and evaluating training programs, as well as discussing learning theory and instructional approaches)

Goldstein, I.L. The pursuit of validity in the evaluation of training programs. Human Factors, 1979, 20(2), 131-144.

(Discussion of questions such as, "Did training make a difference in this situation?" and "Do results in this situation apply to other trainees or other organizations?")

Hamblin, A.C. Evaluation and control of training. London: McGraw-Hill Book Company (UK) Limited, 1974.

(Discussion of alternative evaluation methods, including descriptions of strategies, objectives, and techniques; examples cover the range from cost-benefit approaches to reaction measures)

Heydinger, Jr., R.B. Planning an innovation: An inventory of decision variables. Improving Human Performance Quarterly, 1979, 8(2), 123-133.

(A checklist of characteristics useful for planning a program evaluation study, such as time frame, reference points, methodology, and feedback)

Kearsley, G. Costs, benefits, and productivity in training systems. Reading, MA: Addison-Wesley, 1982.

(A down-to-earth explanation of four models - two related to training costs; one to short-term benefits of training; and one to training and productivity)

Kirkpatrick, D.L. Evaluation of training. In R.L. Craig (Ed.), Training and development handbook (2nd ed.). New York: McGraw-Hill, 1976.

(Four types of training evaluation data - reaction, learning, behavior, and results - are discussed)

Korb, L.D. How to measure the results of supervisory training. Personnel, March 1956, 378-390.

(Guidance on various levels of supervisory training evaluation - effects on participants while in training and after training, and effects on the organization)

Leonard, Jr., E.C. Assessment of training needs. Fort Wayne, IN: City of Fort Wayne (Jerry D. Boswell, Project Director), 1974. Developed for Midwest Intergovernmental Training Committee, Intergovernmental Personnel Program, U.S. Civil Service Commission.

(A training manual which includes examples of methods for doing organizational, job, and manpower analyses, and identifying training needs)

Meier, T.K. & Pulichene, J.P. Evaluating the effectiveness of assertiveness training. Training and Development Journal, 1980, 34(2), 66-68.

(Describes a method for determining extent to which employees exhibit "assertive" behavior, as judged by the employees' supervisors; judgments made from the beginning of training through a period after training completion)

Mezoff, B. How to get accurate self-reports of training outcomes. Training and Development Journal, 1981, 35(9), 56-61.

(A method for increasing the accuracy of participants' judgments of their knowledge and skill levels before training compared to after training)

Minick, R.D. & Medlin, S.M. Anticipatory evaluations in HRD programming. Training and Development Journal, 1983, 37(5), 89-94.

(Describes in general different types of evaluations to be done during different phases of the training cycle, particularly the collection of information while planning HRD programs)

Morrisey, G.L. & Wellstead, W.R. Supervisory training can be measured. Training and Development Journal, 1980, 34(6), 118-122. (Originally published June 1971.)

(Use of objective-setting at the end of training, and progress reports after training, as a means of evaluation and participant commitment)

Mosel, J.N. Why training programs fail to carry over. Personnel, Nov./Dec. 1957, 17-25.

(How to ensure that what participants learn is transferred to the job)

Parker, T.C. Statistical methods for measuring training results. In R.L. Craig (Ed.), Training and development handbook (2nd ed.). New York: McGraw-Hill, 1976.

(Measurements methods and their application to effects of training on personal characteristics, individual and organizational performance, and return-on-investment)

Peterson, R.O. (Ed.) ASTD Research Series No. 3: Determining the payoff of management training. Madison, WI: American Society for Training and Development, 1979.

(Papers from the first annual invitational research seminar, covering topics such as general guidelines for evaluating the outcomes of management training and an approach to determining the value of such training)

Phillips, J.J. Handbook of training evaluation and measurement methods. Houston, TX: Gulf Publishing Company, 1983.

(Covers a wide range of training evaluation areas, including designing an evaluation effort, selecting instruments and sample participants, collecting and analyzing data, determining program costs, measuring return-on-investment)

Putnam, A.O. Pragmatic evaluation. Training and Development Journal, 1980, 34(10), 36-40.

(General discussion of problems with evaluations which are "truth-seeking;" lists eight questions to guide evaluator through "pragmatic" assessment efforts)

Rummler, G.A. You need performance, not just training. Training, 1977, 14(10), 50-53.

(Summary of the causes of poor performance and the role of training in managing performance improvement)

Salinger, R.D. & Deming, B. Practical strategies for evaluating training. Training and Development Journal, 1982, 36(8), 20-29.

(Description of evaluation strategies which answer such questions as the appropriateness of the training and the transferability of the training to the job)

Smith, M.E. An illustration of evaluating post-training job performance. Improving Human Performance Quarterly, 1979, 8(3), 181-201. (a)

(A study of a new course for telephone installers, compared to an old one; a variety of measures were used to compare recent graduates of the two courses as well as performance of experienced installers; also an analysis of the evaluation measures themselves)

Smith, M.E. Exchanging ideas on evaluation: 15. New England Telephone's training management operational review plan. NSPI Journal, 1979, 18(6), 44-47. (b)

(Description of New England Telephone's quality control process for its training function, including a matrix of 34 variables measured (e.g., timeliness of training, efficiency of development) and the 20 general types of exercises used to measure variables)

Smith, M.E. Evaluating training operations and programs. Training and Development Journal, 1980, 34(10), 70-78.

(Reviews Brethower/Rummler evaluation model and combines with AT&T generic list of major training organization activities; discusses problems in doing evaluation and conditions supportive to evaluation)

Smith, M.E. Field research designs. NSPI Journal, 1982, 21(2), 27-29.

(Reviews "quasi-experimental" designs which can be used to conduct evaluation studies; gives references to efforts in which designs were used)

Snyder, R.A., Raben, C.S., & Farr, J.L. A model for the systematic evaluation of human resource development programs. Academy of Management Review, 1980, 5(3), 431-444.

(Discusses different types of evaluation appropriate at different stages of developing and implementing an HRD program, and discusses objectives and guiding principles for each type of evaluation, e.g., summative evaluation for assessing program effectiveness and efficiency)

Spitzer, D.R. But will they use training on the job? Training/HRD, 1982, 19(9), 48, 105.

(Brief descriptions of twelve techniques which will help transfer learned classroom skills to the job; examples are personal action planning, group action planning, the buddy system, and follow-up sessions)

Thiagarajan, S. The President's Pages: Transitional evaluation - Correcting and confirming planned change. NSPI Journal, 1979, 18(3), 1-3.

(A general approach for comparing the costs and benefits of old and new systems, e.g., different methods of training, with alternatives, depending on what kind of data is available)

Thomas, E.A. Training needs identification: A turning point. NSPI Journal, 1982, 21(8), 6-8.

(A performance-based process which can be used to evaluate the adequacy of the organization's training program and to anticipate training needs; an example of a question is: What type of new employees, i.e., with what skills, are being recruited and will be recruited in the future and for what positions?)

Training Research Forum members. The emperor's clothes. Training and Development Journal, 1979, 35(6), 50-60. (Originally published July 1970.)

(Describes three basic abilities underlying management behavior in any setting and stresses the need to involve top management in the design and implementation of a management development program)

Warren, M.W. Delivering training in a decentralized organization. Training/HRD, 1978, 15(12), 39-41.

(Consequences of training to participants, and their supervisors and managers; how supervisors can ensure that performance changes occur as a result of training)

Warren, M.W. Training for results: A systems approach to the development of human resources in industry (2nd ed.). Reading, MA: Addison-Wesley, 1979.

(A book about the systems approach to training which looks at training as a technology (an applied science of human performance) and designed with a specific mission in mind; some concepts discussed are: training as a system, estimating costs, evaluating training actions, and developing management training)

Wise, R.E. & Zern, H.R. Identifying and improving management skills at Hartford National Bank. Training/HRD, 1982, 19(11), 56-58.

(Description of the procedures used at a bank to train senior managers in basic interpersonal skills through a behavior modeling program; the process included a needs assessment and an evaluation using a pre-/post-test and control group design)

Zemke, R. Management training and development: Measuring the impact. Training, 1977, 14(10), 62-64. (a)

(Brief comments by HRD managers and others on issues to consider in evaluating management training)

Zemke, R. Task analysis: Figuring out what people need to learn. Training, 1977, 14(12), 16-20. (b)

(Briefly reviews task analyses techniques; familiarizes reader with terminology and processes of, for example, critical-incident technique, flow-charting, focus groups)

Zemke, R. & Kramlinger, T. Figuring things out: A trainer's guide to needs and task analysis. Reading, MA: Addison-Wesley, 1982.

(Extensive coverage of various techniques and procedures for studying organizations, performing task analyses, and determining training needs)

Zemke, R., Standke, L., & Jones, P. (Eds.) Designing and delivering cost-effective training - and measuring the results. Minneapolis, MN: Lakewood Publications, 1981.

(Collection of articles on wide range of training topics, from the last 16 years of Training magazine)

Zenger, J.H. & Hargis, K. Assessing training results: It's time to take the plunge! Training and Development Journal, 1982, 36(1), 11-16.

(Discussion of why training should be evaluated and some guidelines and general methods for doing it; includes examples of designs to measure on-job behavior change of supervisors)

June 1983

Prepared by:

Ruth Salinger
U.S. Office of Personnel Management
Washington, DC 20044

(With the assistance of Cynthia Roberts, University of Maryland)

APPENDIX C

U.S. OFFICE OF PERSONNEL MANAGEMENT CONTACTS

U.S. Office of Personnel Management

Central Office and Regional Training Contacts

Regions:

Regional Training Officer, Workforce Effectiveness and
Development Division
New England Region
U.S. Office of Personnel Management
John W. McCormack Post Office
& Courthouse Building
Boston, MA 02109

Chief, Workforce Effectiveness and Development Division
Eastern Region
U.S. Office of Personnel Management
Jacob K. Javits Federal Building
26 Federal Plaza
New York, NY 10278

Director, Workforce Assistance Division
Mid-Atlantic Region
U.S. Office of Personnel Management
William J. Green, Jr., Federal Building
600 Arch Street
Philadelphia, PA 19106

Chief, Workforce Effectiveness and Development Divisio
Southeast Region
U.S. Office of Personnel Management
Richard B. Russell Federal Building
75 Spring Street, SW.
Atlanta, GA 30303

Chief, Workforce Effectiveness and Development Division
Great Lakes Region
U.S. Office of Personnel Management
John C. Kluczynski Federal Building
29th Floor
230 South Dearborn Street
Chicago, IL 60604

Chief, Workforce Effectiveness and Development Division
Southwest Region
U.S. Office of Personnel Management
1100 Commerce Street
Dallas, TX 75242

Chief, Workforce Effectiveness and Development Division
Mid-Continent Region
U.S. Office of Personnel Management
300 Old Post Office Building
815 Olive Street
St. Louis, MO 63101

Chief, Workforce Effectiveness and Development Division
Rocky Mountain Region
U.S. Office of Personnel Management
Building 20
Denver Federal Center
Denver, CO 80225

Chief, Workforce Development Division
Western Region
U.S. Office of Personnel Management
120 Howard Street, 2nd Floor
San Francisco, CA 94105

Chief, Workforce Effectiveness and Development Division
Northwest Region
U.S. Office of Personnel Management
Federal Building, 26th Floor
915 Second Avenue
Seattle, WA 98174

Central Office:

Ruth Salinger
Training Resources Management Division
Office of Training - Workforce Effectiveness
and Development
U.S. Office of Personnel Management
Box 7230
Washington, DC 20044

Loretta Flanders, Ph.D.
Office of Executive and Management Development
U.S. Office of Personnel Management
Room 7H30
1900 E Street, NW.
Washington, DC 20415